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NEW JUNCTION LINE AT SHANGHAI

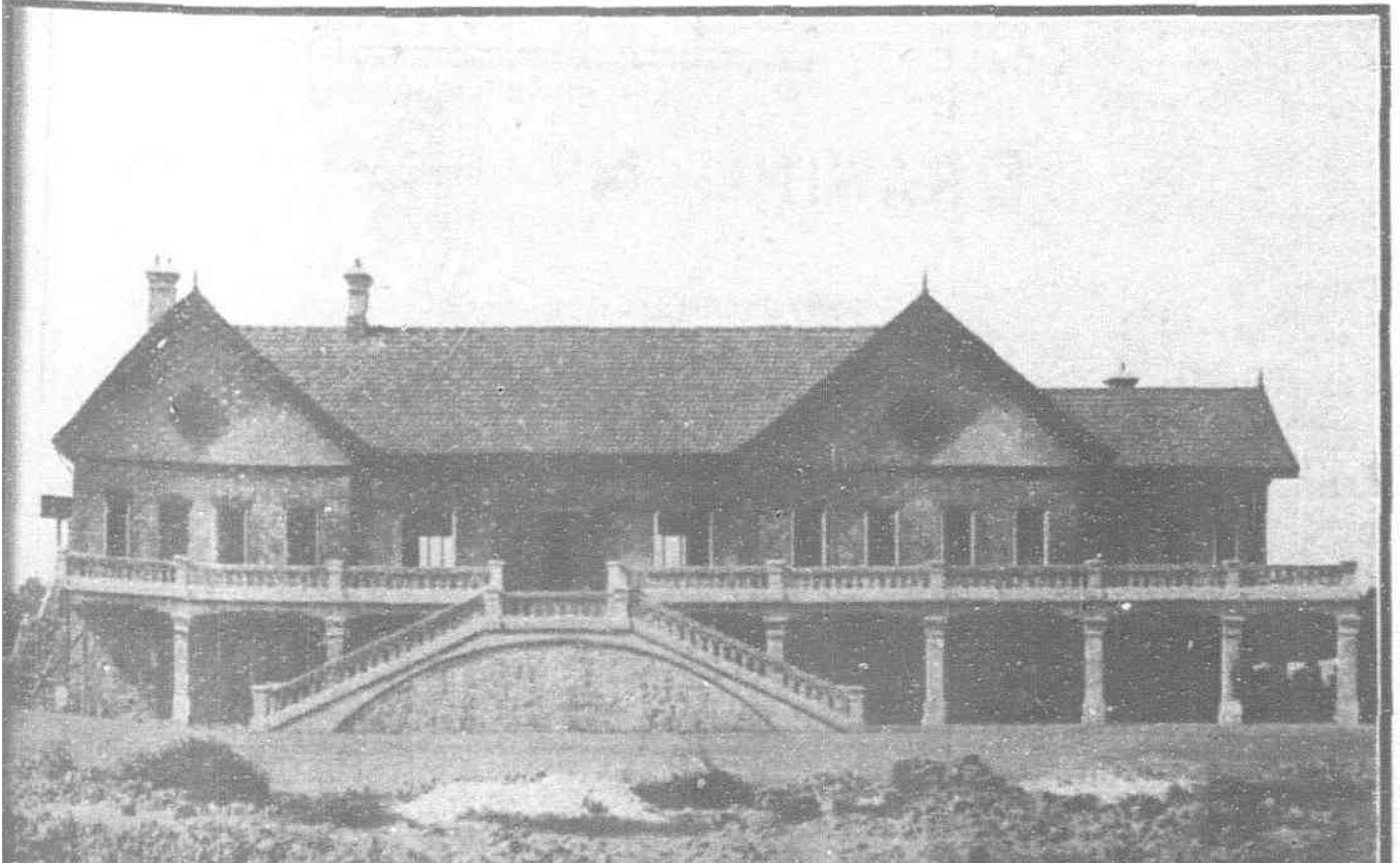
The linking of the northern railway system of China with that of the Shanghai-Hangchow-Ningpo line was inaugurated on December 9 when the first train travelled over the junction line between the Shanghai-Nanking Railway and the Shanghai-Hangchow-Ningpo Railway, a line over ten miles long which has just been completed. Trains left Shanghai North and South and took the guests over the line. The various stations—terminii and intermediate—were decorated with flags of China and the Allied Powers while the locomotive which drew the large train out of Shanghai North carried the Chinese and British flags crossed in front. The inspection of the route having been made the guests were conducted to a large mat shed erected outside Jessfield Station, the most imposing of the stations on the line, where an excellent tiffin was served to about 300 including representatives of the foreign commercial community and a large number of Chinese merchants. There were present Messrs. C. G. S. Mackie, C. Rousse, T. H. U. Aldridge, C. H. Godfrey, Chung Mun-yew, A. C. Clear, Engineer-in-Chief of the line, D. P. Griffiths, Tsao Huang, representative of the Ministry of Communications, Col. Chao, representative of Gen. Yang Shenteh, the City Magistrate, President of the Chinese General Chamber of Commerce, a representative of the Vice-President, a representative of the Governor at Hangchow and one of the Tuchun of Chekiang.

Tiffin was served at a series of tables which had been arranged with excellent taste by the ladies of the railway, the floral decorations being of poinsettias, the red and green of which were the railway's colours.

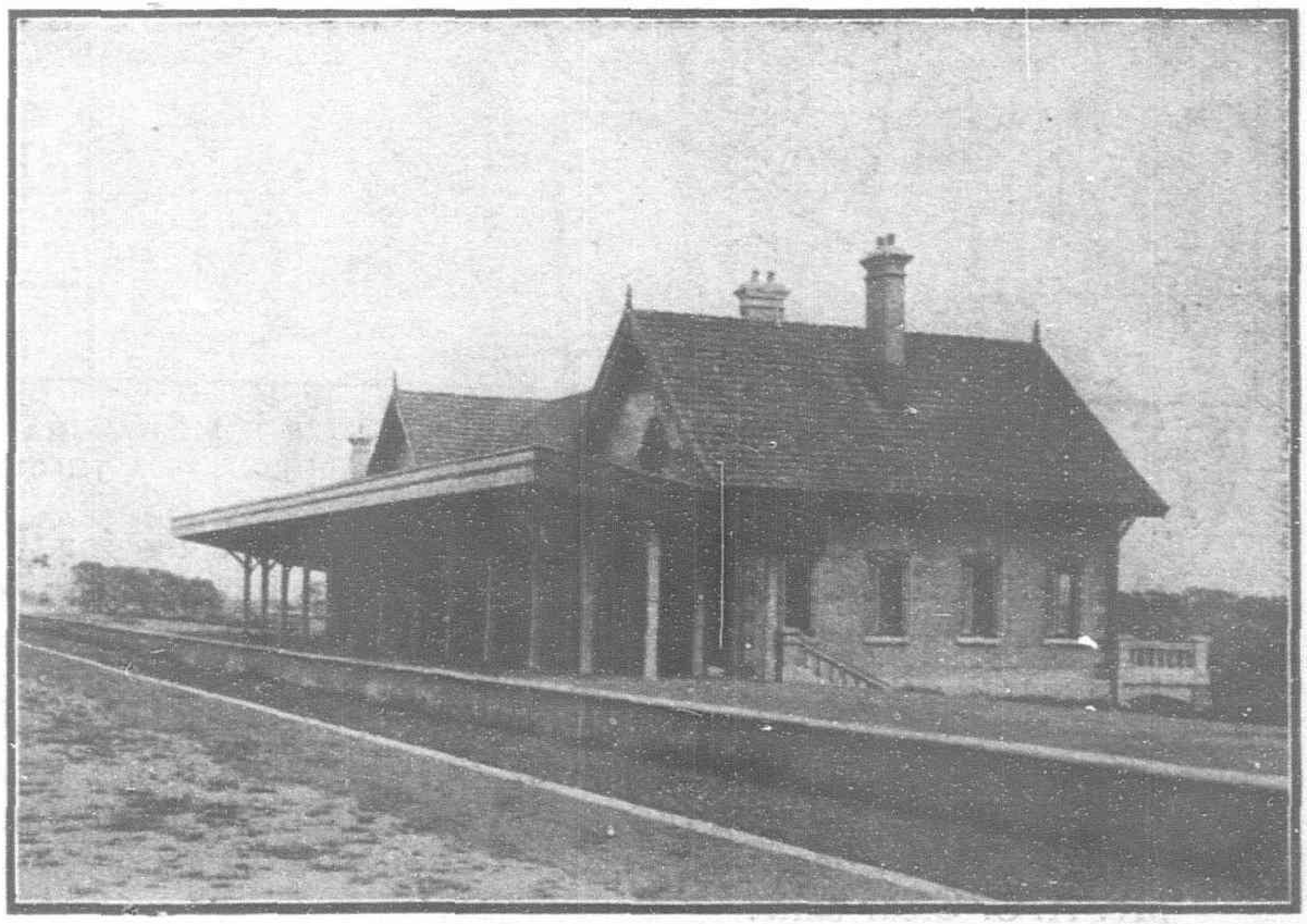
Mr. Chung Mun-yew, who acted as toast-master, stated that a telegram had been received from the Ministry of Communications expressing gratification at the completion of the work and congratulating the management on the way in which the work had been carried out. Mr. Chung Mun-yew then said:—"It appeared at one time as though Hangchow and Nanking would never be connected up with metals, because of the strong opposition exerted by the powerful gentry of these two great provinces against Government control of the entire line of railway, although the Central Government had for years built and owned the section from Nanking to Shanghai and the provincial gentry that portion from Shanghai to Hangchow, the two being separated by a small gap only. By steadily keeping the object in view and after years of patient waiting and diplomacy the Central Government finally triumphed and the public as well as the Government will benefit by the new order of things. And thanks to the high class technical skill brought into play, resulting in the ocular demonstration to which we have been treated to-day, the dream has become a reality. The technical staff, under the wise leadership of our Engineer-in-Chief, may well feel gratified with the result not only from a technical point of view but on the score of economy."

The various representatives present then addressed the meeting in Chinese, offering the congratulations of their principals upon the completion of the line, and Mr. Chung then called upon Mr. Mackie, as representing the foreign commercial interest, in Shanghai, to say a few words. Mr. Mackie said in part:—

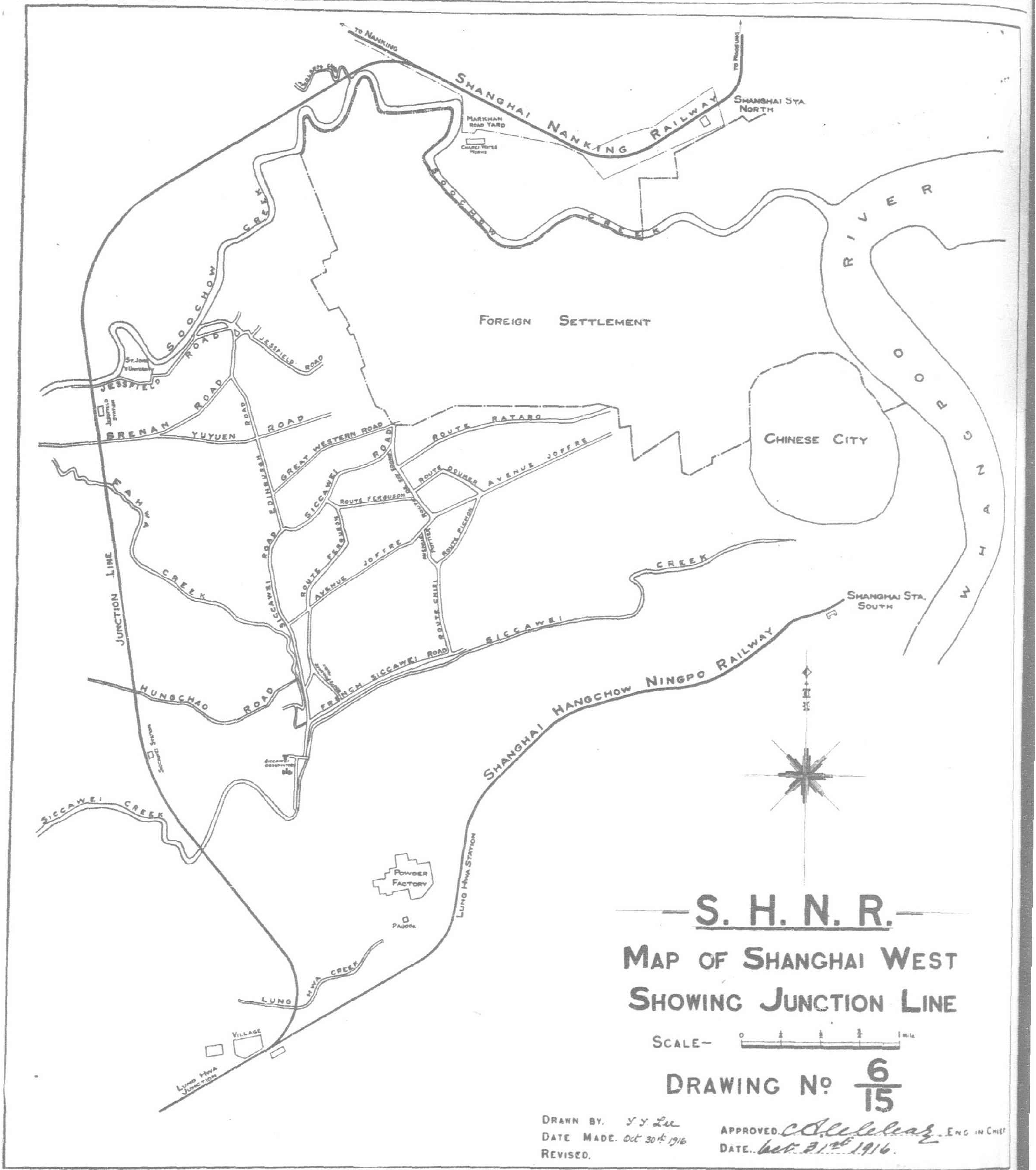
"This line, the formal opening of which we now celebrate, forms a short but none the less important link between two railways, the value of which to the Chinese Empire is probably as yet but dimly realized.



JESSFIELD ROAD STATION FROM ROAD APPROACHES



JESSFIELD STATION, SHOWING TRAIN PLATFORM



Map Showing the Junction Line which connects the Shanghai-Nanking and the Shanghai-Hangchow-Ningpo Lines of the Chinese Railway System, giving a through track from Mukden to Hangchow

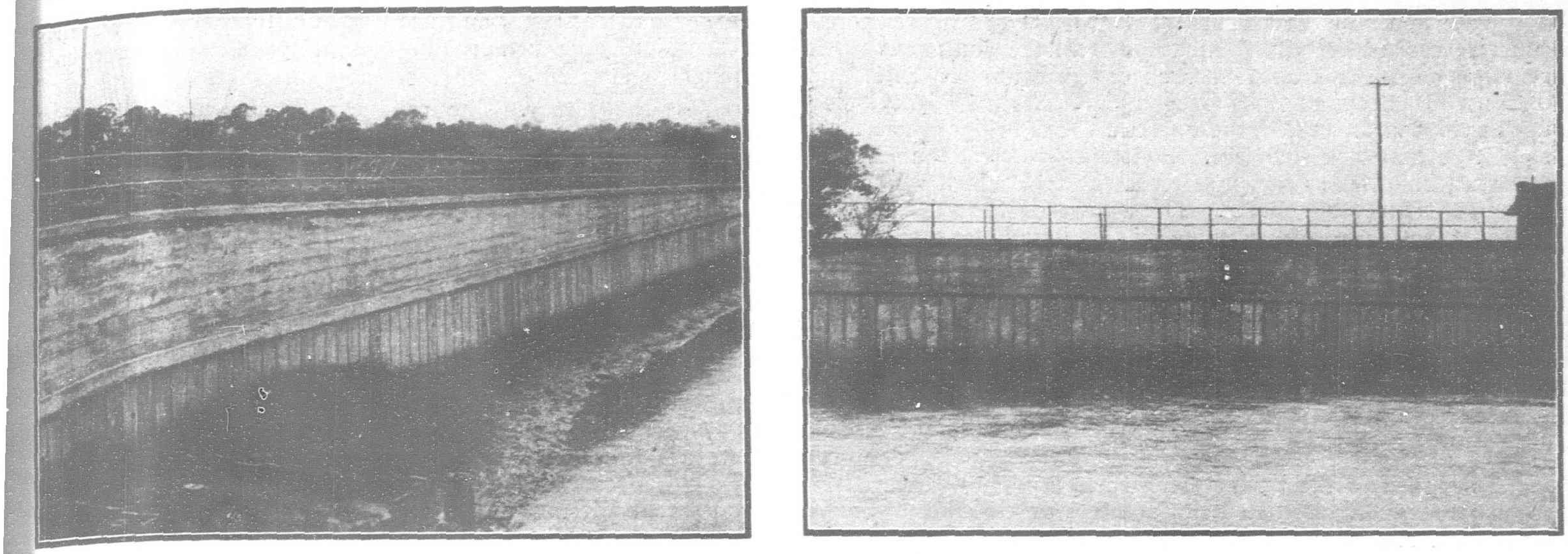
"That it will prove of immense benefit in allowing for the quick and easy transport of goods destined from one railway to the other goes without saying and I have to congratulate the executive on pushing the line through in spite of the many difficulties they have had to contend with. In conclusion, gentlemen, permit me on behalf of your guests to wish this new addition to China's growing railway system all the success that a progressive policy deserves."

Mr. A.C. Clear said:—

"The building of this line has been attended with no very great engineering difficulties beyond the ever present one of foundations, but we now have sufficient experience of the treacherous nature of the soil in this part of the country to feel secure in the precautions that have been taken.

"These 10½ miles of railway form a fairly complete example of railway building in general, and have proved an excellent object lesson to our Chinese student engineers. Good, substantial and economical work has been insisted upon throughout. Thus only is that first essential of a railway's requirements obtained, that which should be summed up in the one word—safety.

"There is a great future before Shanghai, gentlemen, already it is far and away the most important commercial and industrial centre of China, and when this present terrible period of war has passed, and peace once more reigns throughout the world, we all hope that prosperity will go hand-in-hand with it. It cannot then be long before those prophecies to which I have on several occasions given utterance are fulfilled, and we shall see



Bunding for Soochow Creek Bridge

the already long line of wharves and docks on the Huangpu considerably extended. With these in direct railway communication with one of the most productive regions in China, the export trade which she needs should be built up in the most expeditious and economical manner. This Junction line forms an important link in what may be termed the Great Eastern Trunk Line of China. A glance at the map will show continuous communication from Mudken southwards to Hangchow with the exception of the Yangtze crossing at Nanking and is typical of the steady development that is taking place in this great country. Within the last few years we have been put within 12½ days of the great centres of Europe; China is no longer isolated, and it is good that we should be reminded from time to time of these things, so that we may live up to them and adjust our lives, thoughts and habits of business to meet the constant changes brought about by progress and development.

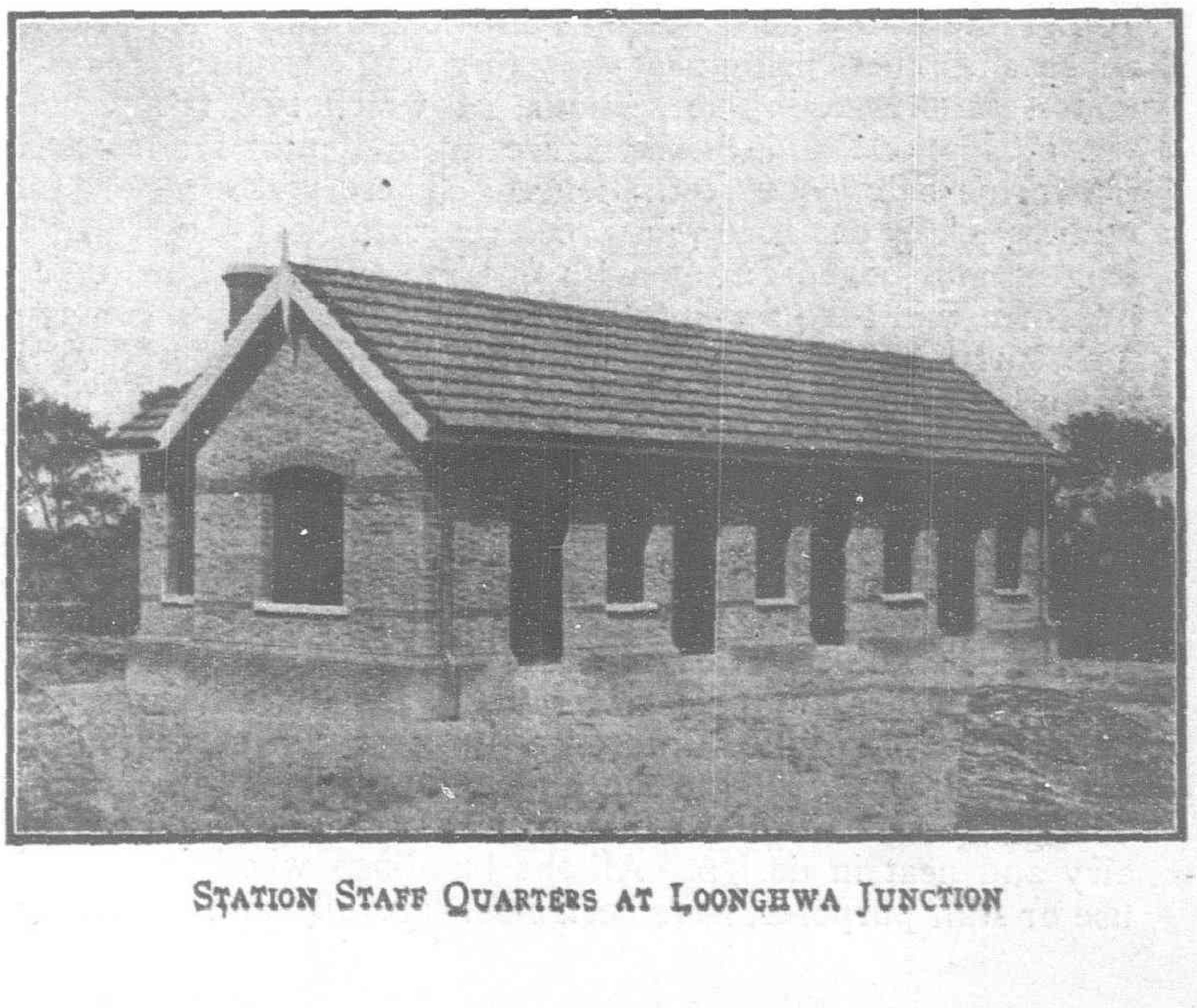
"This Junction line also affords an excellent example of the benefits of co-operation. By hearty co-operation and harmonious working between the two railways under the wise direction of Mr. Chung, mutual advantages have already been obtained, these will be still further expanded and secured by the closer working that will now be possible. It is generally understood that owing to lack of confidence in each other, co-operation in the true sense of the word is not practised between Chinese merchants, yet they hold well together in matters of politics affecting commerce, whilst their individual integrity in business matters is unquestioned. Co-operation is just as essential in business as in national affairs, and with the spirit of development now abroad it may be possible to secure that hearty co-operation which is essential to national and commercial life. This is to be sincerely hoped, as it is the soundest basis upon which to build that peace and prosperity which we all hope to see assured, not only in China, but throughout the world. To sum up, gentlemen, look ahead and co-operate."

The following technical notes on the Junction Line were supplied the Far Eastern Review by the courtesy of the Engineer-in Chief:

This line links up the Shanghai-Nanking Railway with the Shanghai-Hangchow-Ningpo Railway and is 10¼ miles in length from Shanghai North on the former line to Loonghwa Junction on the latter, and is a most important link in what might be termed the Eastern Trunk Line of China. It branches off from the Shanghai-Nanking Railway main line about two miles from Shanghai North Station, crosses Woodlands Creek near Ferry Road, the Soochow Creek near St. John's University and Jessfield Park, Fa Creek, Siccawei Creek and Loongwha Creek, these five creeks necessitating major and minor bridges, the remaining creeks being culverted.

Major bridges span the Soochow and Siccawei Creeks, the spans being 145 feet and 65 feet respectively, and minor bridges span the remaining three, the spans being respectively 40 feet, 20 feet, and 30 feet for Woodlands, Fa Hwa and Loonghwa Creeks. All bridge abutments are built for double line, but steelwork for single line only has been provided. In all cases except the Fa Hwa creek bridge, the centre girders are designed for one other girder to be attached to form eventually a bridge to carry two lines of railway.

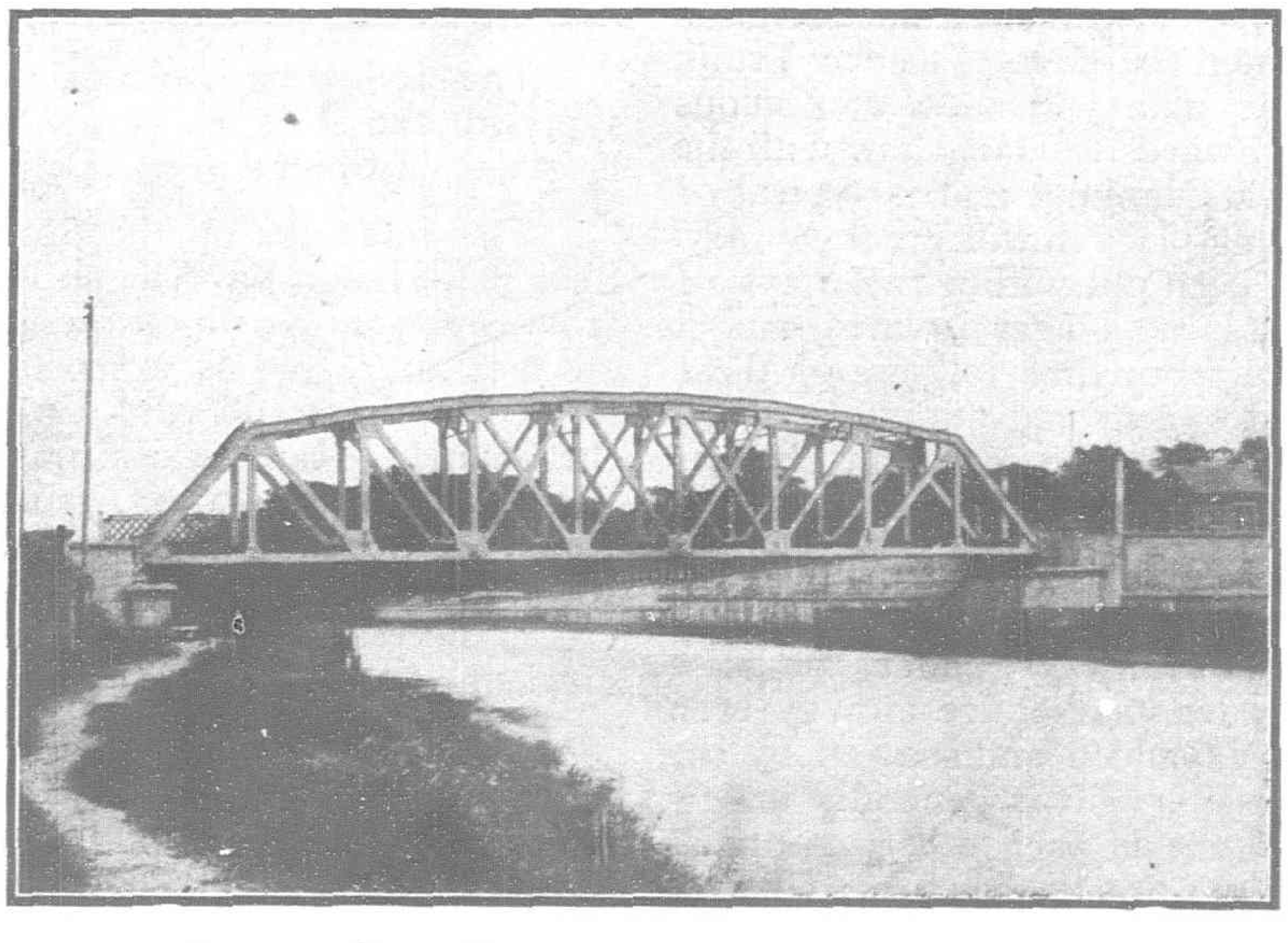
Siccawei Station



Station Staff Quarters at Loonghwa Junction

The Soochow Creek bridge abutments are of reinforced concrete carried on pile foundations, and the abutments of the remaining bridges are of massed concrete also on pile foundations. In all foundations Oregon pine piles 12″ square were used except in the case of the Fa Hwa Creek bridge where an 8″ square section was sufficient. Substantial coffer-damming was necessary in all cases except at Fa Hwa Creek which was simply dammed with earth dams. The nature of the subsoil was in all cases the same—silt, in some of the foundations softer and more treacherous than in others. In the case of the Soochow Creek bridge, the treacherous nature of the soil necessitated special precautions in the design whereby stability was ensured by spreading the weight. The ballast used in the concrete for all the bridges came from Soochow and the quarries near Sung Kiang, ¾ inch and 1" gauges being mixed together. The composition of the concrete is:—1 cement, 3 Ningpo sand, and 6 ballast.

In regard to the bridge steel-work, tenders were invited in the usual manner. British manufacturers were unable to quote as official war restrictions prevented them from guaranteeing either manufacture or delivery in a limited time. The only tenderers were the Hang Yeh Ping Ironworks and the United States Steel Products Co. The tender of the former was higher than that of the latter, and consequently the United States Steel Products Co. was awarded the contract. With the exception of the Soochow Creek bridge all the others are plate girders. No difficulty was experienced in erection, all parts fitting well together in every instance. The bridge work generally is all of a substantial character carried out in first class style in a most economical manner.



Soochow Creek Bridge at Jessfield—145 foot span

Culverts. The culverts are 26 in number of reinforced concrete tubes 3 feet internal diameter cast in 2 feet lengths. No bearing piles were used in the foundations, only sheet piling around the 12 inch thick concrete slab on which the tube is set. The composition of the concrete in the tubes is 1, 2, 4 and in the remainder 1, 3, 6. The wing walls are built of dry rubble neatly hand-packed.

Earthwork. The bank is 18 feet wide at Formation level and 26 feet in the cuttings of which there are only two, both under 3′-6″ in depth. Sufficient land width to enable the track to be doubled at some future date has been left all through. The gradients are 1 in 300 and 1 in 500 and only occur at bridge approaches, these being necessary to give the required clearances under the bridges. The stations, of which two are provided, viz. at Jessfield and Siccawei, are in gradients of 1 in 500, the platforms being 600 feet in length. These platforms are faced with specially designed reinforced concrete blocks, cast in 3 feet lengths and paved on top with quarry spawls. This type of platform wall has proved to be very satisfactory and economical. The surfacing is composed of decomposed granite well worked down between the joints of the paving spawls with a surplus of sand on top 1 inch thick.

In anticipation of the neighbourhood of Jessfield developing as a residential quarter a suitable station building of neat appearance and attractive design with more accommodation than either Siccawei or Loonghwa Junction stations has been provided. The roofs of all the station buildings are tiled with red French tiles, adding considerably to the attractiveness of the buildings with little difference in cost as compared with corrugated iron, owing to the high prices ruling for the latter. The gangers huts and menial quarters are of brick, well built, airy and neat in design. All the buildings, whether for public use or staff purposes, have been most carefully and conveniently planned and designed, and are well built throughout. Well-laid out station approach roads are at Jessfield, Siccawei and Loonghwa Junction.

Permanent way. The rails are 85 lbs. per yard British Standard Section obtained from the Hang Yeh Ping Ironworks, as were also the fastenings. The sleepers are of three kinds, creosoted Douglas Fir, Selected Japanese Oak, and a small quantity of Jarrah sleepers, the reason for adopting these different varieties being to obtain reliable data for future use by careful observations and record as to cost, wear, etc. Soochow Granite and Sunkiang Stone have been used for track ballast, bottom ballast being from 3″ to 5″ gauge and top ballast 1½″ gauge. That portion of the line already ballasted in this manner gives very smooth running. The curvature is very easy, the sharpest curve being 3 degrees and the flattest 1 degree.

Apart from the ordinary native pathway level crossings, there are four public road level crossings on the line, viz:—at Jessfield, Brenan, Hunjao and Tsao Chi Roads. The approach gradient in all cases is 1 in 30 easing off at the ends to 1 in 60, thus forming a very easy slope for all vehicular traffic. The Jessfield Road level crossing necessitated very considerable bunding, as this road runs parallel to and close alongside the Soochow Creek at the southern end of the Soochow Creek bridge. This bunding is built up of reinforced concrete interlocking piles driven down to within 8′-0″ of water level. On the top of these a reinforced concrete wall with a gradient of 1 in 30 is built to correspond with the grading of the road crossing. All these reinforced concrete piles were cast in the Railway yard close to the site, and it may be interesting to note that out of 690 piles that were made, there was not a single failure either in casting or driving. The composition of the concrete in these piles is:—1 cement, 2 Ningpo sand, 4 Soochow granite-chips ½ in. gauge and under.

Particular care was exercised in washing the ballast and sand to ensure freedom from dirt. The ingredients were carefully gauged and the concrete well mixed and rammed close around and among the reinforcing bars. All reinforced concrete was done under expert supervision. In driving the piles, caps made of layers of Chinese coarse straw-paper were used to prevent chipping at the heads from the impact of the monkey in falling, and it was found that such a cushion proved very successful, was easily renewed and trifling in cost. Including the existing bridge on the Shanghai-Nanking Railway, the waterway opening per mile for the 10¼ miles is 39 feet.

Considerable alterations have been necessary to the Shanghai North station in anticipation of the increase of traffic upon the opening of the Junction Line. An additional covered platform has been provided and improved facilities given for the expeditious booking of passengers. The Woosung Branch Line has been provided with a station building and booking office entirely separate from the Main Line building to relieve the congestion which at present exists, and which will be accentuated by the opening of the Junction Line. The coolie class booking offices for both railways are also entirely separated from the 1st, 2nd and 3rd class booking offices, adding generally to the comfort and convenience of passengers. Improvements have also been made for the handling of passengers' baggage by the provision of a commodious baggage room immediately accessible from the road, in which ample accommodation is given for the booking and checking of passengers' baggage. To provide for the goods traffic from the Shanghai-Hangchow-Ningpo Railway, a new dock 1,000 feet long by 200′-0″ wide with ample depth of water at lowest tide to take the heaviest cargo lighters, has been built at Markham Road. Godowns have been erected upon either side and every facility given for the the rapid handling of cargo. The whole of the yard and godowns are electrically lighted, and efficient fire protection has been given throughout. The Shanghai-Nanking Railway has trained fire brigades both at the Shanghai North station and at the Markham Road Goods Depot. Emergency calls are given from time to time to test the efficiency of the brigades.

Security to the Traffic is secured by the electrical staff working which is now being installed on the Junction Line. The Shanghai-Nanking Railway has already adopted a system of electrical train staff working as far as Soochow and is now making arrangements to extend this to Nanking. It is eventually proposed to adopt a similar system on the Shanghai-Hangchow-Ningpo Railway. In addition to this a simple and effective system of signals has been erected at every station and Junction to ensure further safety in train working. All signal posts are of reinforced concrete and the lamps of Shanghai North and Markham Road Junction are electrically lighted.

The Managing Director on behalf of the Chinese Government is Mr. M. Y. Chung. Mr. A. C. Clear, M. Inst. C. E., is the Engineer-in-Chief for the whole of the work, whilst Mr. D. P. Griffith, M. A., M. Inst. C. E. Ire., carried out the executive duties of the Junction Line construction as District Engineer, assisted by the following Chinese Engineers and students:—Messrs. J. F. King, C. Y. Hung, Tong Luck, C. P. Fung and S. C. Chen. The intelligence and keen interest in their work displayed by these future engineers of China augurs well for their future success. The building of the Line afforded them a very good opportunity of obtaining knowledge of the most up-to-date methods in reinforced concrete work as well as of first class work generally. Steelwork, reinforcement and general designs were prepared by Mr. E. T. Forestier, A. M. Inst. C. E. Mr. I. Tuxford, Maintenance Engineer S. N. R, supervised construction at Markham Road and Shanghai North with Mr. T. Yang, Senior Assistant Engineer-in-charge. Telephone and Telegraph Work was carried out under the supervision of Mr. W. J. Grey, A. M., Inst. E. E., Electrical Engr. S. N. R.

AMERICAN ASIATIC ASSOCIATION

At the annual meeting of the American Asiatic Association, held at the rooms of the Chamber of Commerce of the state of New York on October 20, Lloyd C. Griscom, formerly Minister to Japan, was elected president, succeeding Willard Straight. The list of officers follows:

President, Lloyd C. Griscom.

Vice-Presidents, Eugene P. Thomas, New York; Theodore B. Wilcox, New York; Alba B. Johnson, Philadelphia, Pa.; John B. Cleveland, Spartanburg, S. C.; Charles M. Schwab, New York; Ellison A. Smyth, Pelzer, S. C.

Treasurer, Joseph R. Patterson, New York.

Secretary, John Foord, New York.

Executive committee, class of 1919, George C. Allen, New York; H. E. Cole, New York; Willard Straight, New York.

Mr. Straight, the retiring president, reviewed general conditions in the Far East, saying in part:

Although during the past year there have been a number of important developments in the Far East, the fundamental situation has remained substantially unchanged. The death and consequent elimination of Yuan Shih-kai, and the conclusion of the agreement between Russia and Japan with regard to their respective interests in Manchuria and Mongolia, were merely the logical results of the trend of events which for some time had been manifest.

Considerable concern has been expressed in this country lest the open door for American trade in China would be closed, and efforts have been made by some to stir up ill feeling and apprehension on the part of the public with a view to creating difficulties between the United States and Japan. With these efforts your executives have not been in sympathy.

We have felt it to be the part of wisdom to watch developments rather than to attempt to express from time to time our views as to a situation which was constantly changing.

Despite political perplexities in the Far East, American trade, both with China and Japan, has increased considerably. New firms have been organized and old firms have been strengthened, and there seems to be an increasing interest in the possibilities of Far Eastern trade, both among those who wish to export to Eastern Asia and those who are commencing to import Asiatic products.

Our trade with the Philippines has also increased, and despite political uncertainties there seems a growing readiness on the part of American investors to place money in Philippine developments.

During the past year also, the ownership of the Pacific Mail Steamship Company has passed to the American International Corporation and W. R. Grace & Co., and the transpacific service, which had been discontinued by the previous management, has now been resumed. American banking interests, which for the past few years have evidenced little activity in China, have recently concluded contracts which should materially benefit American trade.

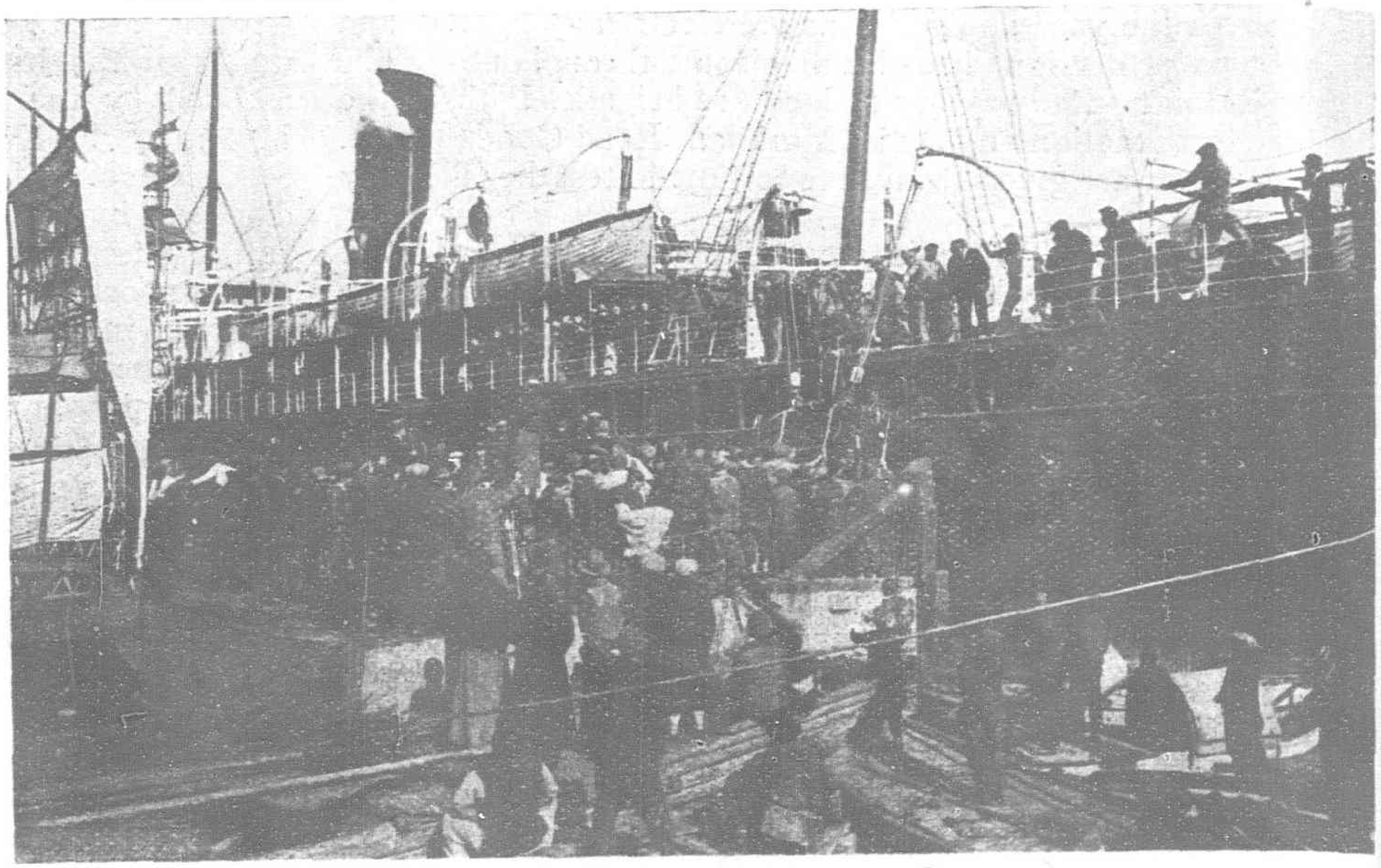
After a number of years of agitation Congress has finally appropriated a sum sufficient to purchase adequate accommodations for the American Consulate General, the Consulate Court and Post Office in Shanghai. The work of Thomas Sammons in this connection should be highly commended, and I believe the association is to be complimented on the part which it played in bringing about this happy result.

During the year just past Julean Arnold, Commercial Attache at Peking, has shown a commendable interest in introducing American goods in China. Mr. Arnold is now in this country traveling from point to point, and has been successful in organizing a number of China-American trade clubs.

In order to meet what is apparently a growing interest throughout the country in Far Eastern matters it has now been determined to enlarge the "Journal of the American Asiatic Association" and make it more popular in character with a view to increasing its circulation, at the same time enlarging the scope of the activities as well as the membership of this association.

In conclusion I desire to express my appreciation of the honor which you have in the past done me in conferring upon me the presidency of this association. I believe the association is to be congratulated in the election of Lloyd Griscom for the ensuing year. The fact that Mr. Griscom served as Minister to Japan, his long experience in the diplomatic service, as well as his intimate knowledge of Far Eastern problems, make him particularly fitted to direct the activities of this association.

CHINESE HONOR DEAD PATRIOT TSAI AO

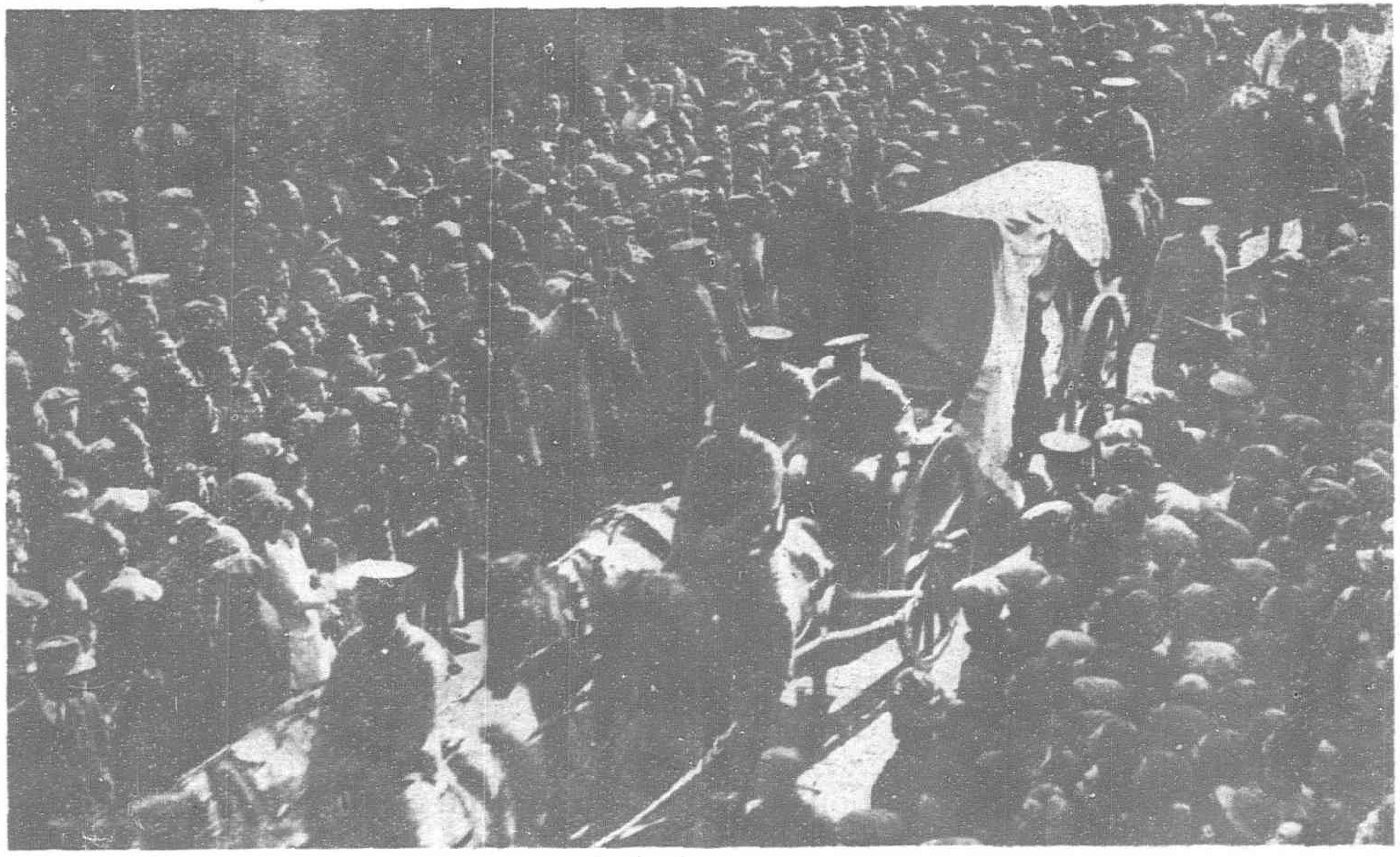


Landing of the Coffin

General Tsai Ao, leader of the Anti-Monarchical revolution in 1915 which brought about the overthrow of Yuan Shih-kai, died at Fukuoka in Japan aged 36 of cancer of the throat and his remains were brought to Shanghai on December 5, to lie in state at the Hall of the Szechuen Guild pending arrangement for their transportation to the General's birthplace in Hunan.

The illustrations on this and the opposite page bear testimony to the high esteem in which the dead patriot was held in the hearts of the people. The line of march of the funeral procession through the foreign settlement of Shanghai was crowded with those desiring to pay a last tribute to the dead soldier whose victory over the legionaries of Yuan in Yunnan and Szechuen confirmed for them the Republican Government which they so hardly won from the Manchus in 1911.

The whole Chinese community was in mourning and from all parts of the Settlement and in French Town, the Chinese City, and the surrounding district the five-barred flag of the Republic was flown at half-mast. Over 5,000 men were in line. All the roads were packed by thousands who had waited patiently since early morning for the arrival of the procession. The American navy was represented by about 50 marines headed by three carrying the American flag. There were about 30 Japanese who were personal friends and admirers of the General. The student body was represented by 10 schools, among them the Nanyang College, Fuh-Tan College, Normal College, Commercial Academy, Pootung Middle School, Y. M. C. A. School, Tung-Yi Girls School and several others. Three troops of Chinese boy scouts made a fine impression. Vice-President Feng Kuo-chang and the Cabinet sent representatives to help with the arrangements and offer sacrifice to the deceased.

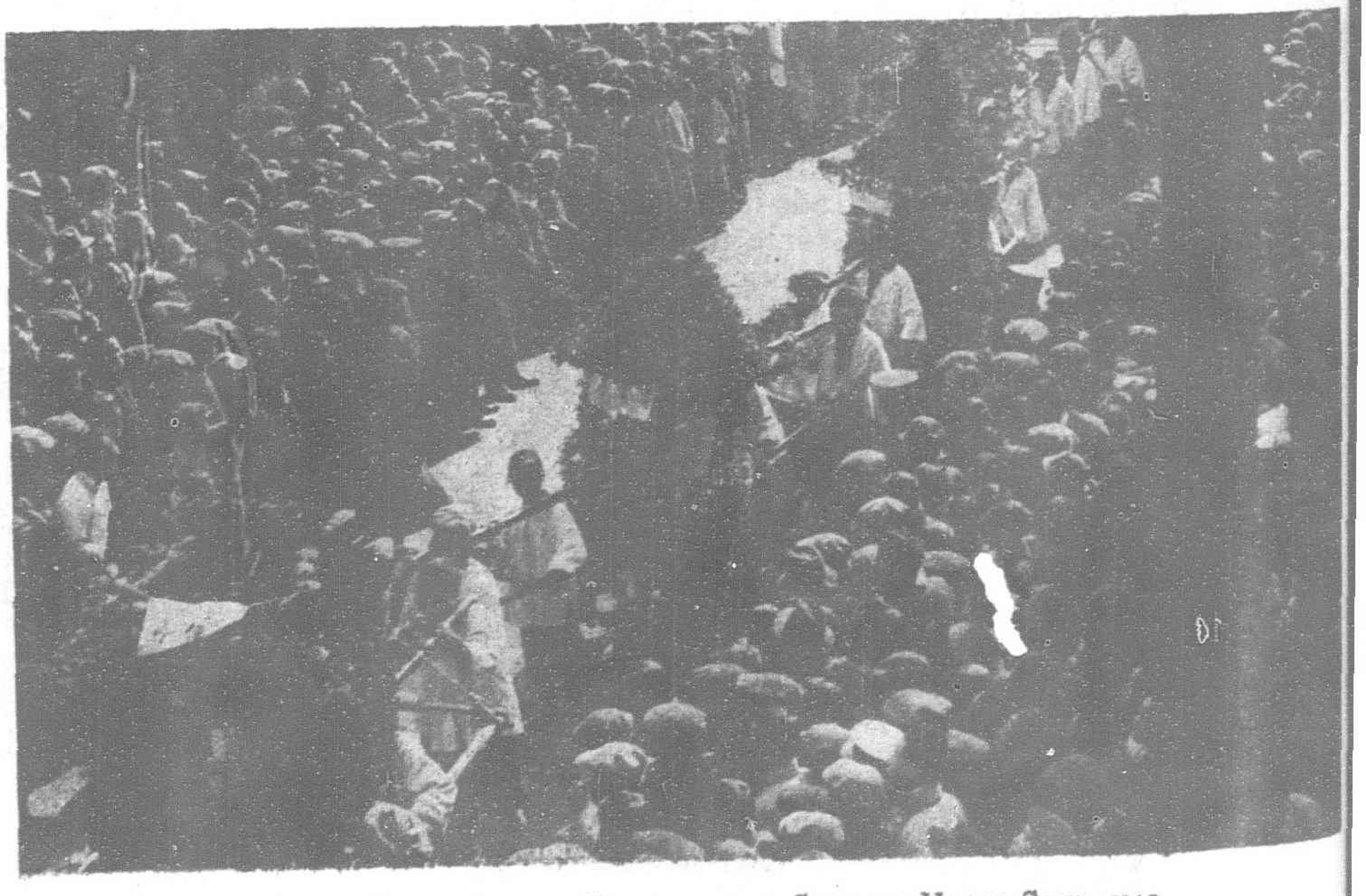


Caisson Bearing the Coffin

The procession in French Town was led by 4 French police officers who conducted the line to Honan Road where mounted Sikhs of the International Settlement, eight in number, were in waiting. The Band of the Shanghai Orphanage followed the Sikhs. Then came the schools and other institutions. They were headed by students carrying scrolls and flags. Following the student body were the Nantao and Chapei Fire Brigades and the Chinese commercial body as well as the Chinese volunteers, who wore plain clothes because their uniforms are being changed.

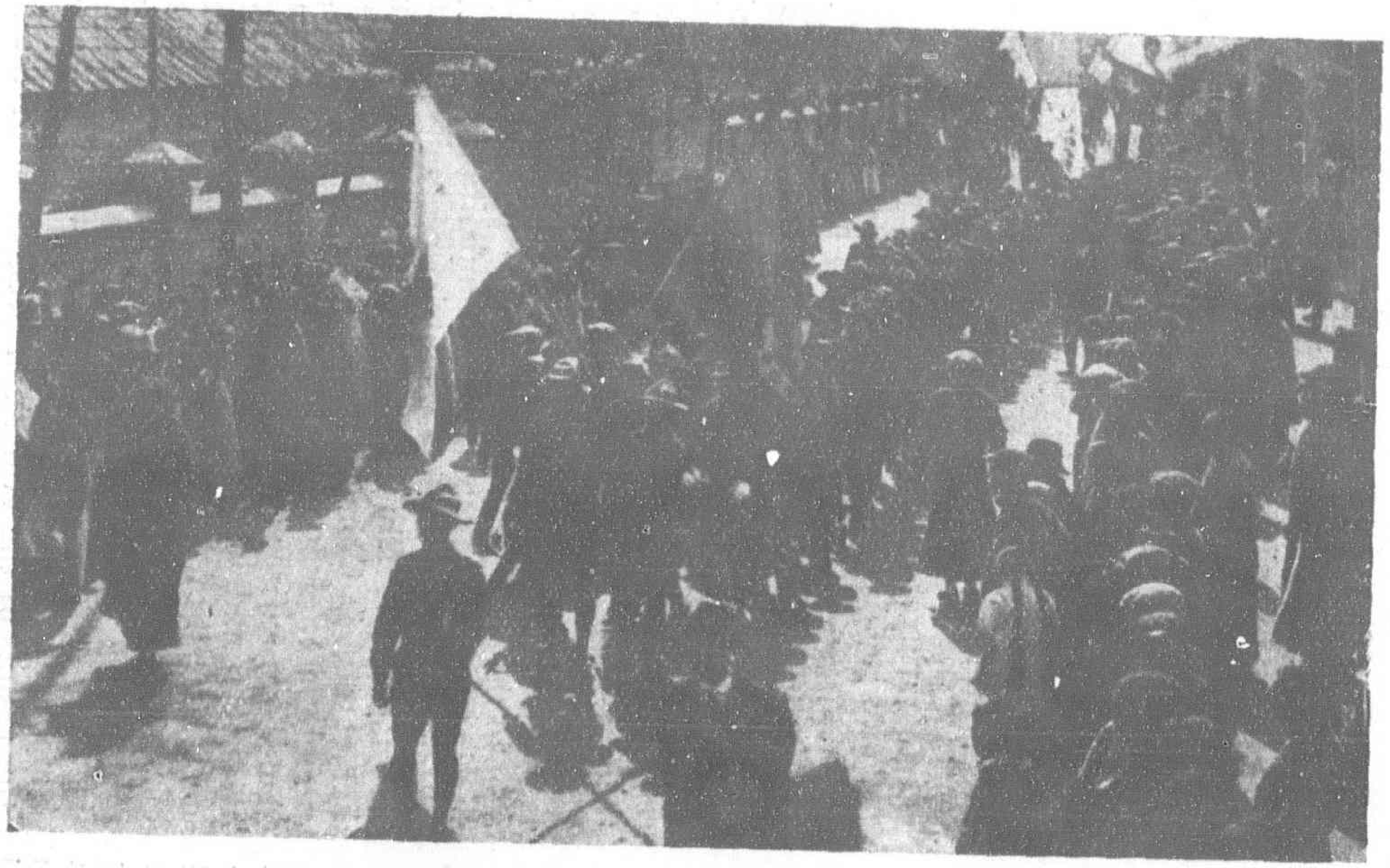
An interesting feature was that three sons of the late President Yuan Shih-kai sent scrolls to be displayed at the Szechuen Guild, whereto the remains of the deceased general were taken. The scroll sent by the second son, Yuan Ko-wen, who is popularly understood to have bitterly opposed the monarchical plot, was the subject of special comment. It said in part:

> You were the model of the people.
> You were the model of the army.
> You were the soul of the Republic.
> You were the spirit of Liberty.



Floral Tributes and Scrolls from Sons of Yuan Shih-kai

SCENES ATTENDING FUNERAL OF GENERAL TSAI AO



Shanghai Chinese Boy Scouts in Funeral Procession

Chinese Firemen from Chapei District of Shanghai

Marine Band and Guard of Honor from Chinese Warships

Section of the Military Contingent from the Kiangnan Arsenal

SHOULD AMERICA CO-OPERATE WITH JAPAN IN CHINA?

The campaign to bring about co-operation between Japan and America in the "peaceful exploitation of China" has gained the powerful support of Judge Elbert H. Gary, President of the United States Steel Corporation. The fact that the movement has secured the support of a man who is indubitably farsighted, and who occupies a position of great prominence among the industrial leaders of a world may be sufficient to cause a number of people to conclude, without further investigation, that the advocates of co-operation should be abetted. While not desiring captiously to criticize Judge Gary's considered opinion the writer feels that it is desirable that the people of America should have placed before them the reasons for his belief that co-operation between America and Japan in the commercial and industrial exploitation of China would have disastrous results, both material and moral. He feels that he is qualified to enter the arena of discussion because, just after the anti-Manchu revolution of 1911-12, he was approached by the representative of an important Japanese financial and industrial concern and asked to assist in propagating the belief that it would be mutually advantageous for foreign capitalists and commercial men interested in China, especially British, to work through Japan. The Japanese gentleman went very fully into the question, and urged the case for co-operation more fully and more eloquently even than did Baron Shibusawa on his recent trip to America. He was much more outspoken than Baron Shibusawa could afford to be in his public utterances. In essence, he argued that the Japanese had a comprehensive knowledge of the Chinese, their language and of China's resources; they had no reputation for altruism to maintain and consequently, when the Chinese authorities proved unwilling to grant a concession or franchise, they would bring the necessary pressure to bear in a manner that the European nations and America would hesitate to adopt, and finally, that Japanese supervisors of Chinese employed in railroad building and operating and similar work, equipped as they would be with a complete knowledge of Chinese methods of peculation and ways of increasing costs at the expense of the foreigner, would be able to effect huge economies and thereby vastly increase profits. There were other reasons advanced, but the three enumerated above were the more important. The writer did not interest himself in the suggestion mainly because he believed that the Japanese wished to use the capital of other nations in China to tighten Japan's political grip on the country and eventually to undermine the interests in China of the very nations whose capital Japan would be employing. That was the view he took in 1912 and he sees no justification for a change of opinion to-day.

Of Judge Gary's bona-fides there cannot be the slightest doubt. When he told the financiers and commercial men of America that co-operation with the Japanese in China is advisable he was commending a policy that he believed, as a result of personal observation in China and conferences with leading Japanese statesmen and captains of industry, would be mutually beneficial. And it must be admitted that, in the absence of a more profound knowledge of the situation than could possibly be gained by the most acute observer in the course of a flying trip to the Far East, the conclusion at which Judge Gary arrived was almost inevitable. He found Japan an organized and efficient nation. She had banks that rank with the best managed institutions of the kind in America or Europe; she had magnificent lines of steamships which showed the Japanese flag in every commercial sea; she had business houses whose organization and credit could not be improved upon, and her Government gave intelligent and sustained support to the development of her natural resources and industries. Added to that she had, in a comparatively few years, changed the chaos that prevailed in Korea before she annexed the country into a state of peace and prosperity. What she had done in Korea she could do in China, and if American capital co-operated with Japanese brains and industry in the work America would share in the increased trade that would ensue from a perpetuation of peaceful conditions and the inauguration of reform in China. That is a view that might well be taken by anyone who has not made a particular study of the Far Eastern question, and who is not aware of the results that have followed the co-operation of foreign capital and Japanese brains and enterprise in South Manchuria.

It is desirable at the outset to inquire what is actually meant by "co-operation between America and Japan in the peaceful exploitation of China." Judge Gary does not seem to have committed himself to any clear definition of what he understood by co-operation. In an interview with a representative of the *New York Herald* he said:

> "In the development of China and the fair distribution of her business, which is bound to increase by leaps and bounds, the United States and Japan can and should co-operate *to the fullest extent.*"

In an address before the Iron and Steel Institute of America on October 27, he said that the public men of Japan

> "Realize that the geographical locations of these two countries should make them practically allies although acting independently and in their individual capacities and interests. And, from the business standpoint, the Japanese manufacturers, merchants and financiers are desirous of co-operating with those in the United States, to the fullest extent, in protecting and promoting the welfare of both and at the same time benefiting those in other countries with whom both of us may be conducting business. They understand and appreciate the spirit of co-operation which has actuated the men engaged in our lines of business and they would be pleased to consider with us all legitimate plans for the application of this principle."

This quotation would lead to the inference that Judge Gary means something by "co-operation" vastly different from the interpretation put upon the word by the Japanese, but in the interview published in the *New York Herald* he speaks of "co-operation to the fullest extent," which brings him up alongside Baron Shibusawa. No one could possibly misunderstand what Baron Shibusawa means by co-operation. He has said in set terms that America has practically unlimited capital while "Japan has the men—men able, trained and capable of holding the positions of managers, engineers and foremen who are versed in the ways of the Chinese and understand their traditions and prejudices. They can be hired much more readily and at much less expense than Americans." Baron Shibusawa also remarked that in the absence of co-operation "our activities in the Chinese market might lead to hostile competition, mutual distrust and bitter animosity, which might be mutually disastrous." This language is brutally frank. America is to be permitted to invest her capital in China, by grace of Japan, but she is not to be permitted to choose her avenues of investment nor to appoint American citizens to safeguard her interests. Few Americans will be found who are ready to admit that in the planning and carrying out of great enterprises America must yield the pride of place to Japan. Co-operation of the kind indicated by Baron Shibusawa presupposes a lack of capacity on the part of Americans to accommodate themselves to Oriental conditions, a supposition the erroneousness of which is strikingly shown when the results of the American occupation of the Philippines are considered. It also presupposes on the part of the Chinese incapacity to co-operate with Americans or other foreigners in the development of China, a supposition that those who really know the Chinese will ridicule. Baron Shibusawa implies that America cannot peacefully exploit China without the permission of Japan, unless she is willing to incur the hostility of his country. This is an extraordinary attitude for Japan, of all countries in the world to adopt. Japan has subscribed to a number of solemn declarations that the principle of equal opportunity shall prevail in China. To prove how unequivocally she has committed herself to the maintenance of that principle it is desirable to quote from extant diplomatic instruments. An agreement between France and Japan was signed in Paris on June 10, 1907, to the following effect:—

> "Les Gouvernements de la France et du Japon, d'accord pour respecter l'independance et l'integrité de la Chine, ainsi que le principle de l'égalité de traitement dans ce pays pour le commerce et les ressortissants de toutes les nations, et ayant an intérêt spécial a voir l'ordre et un état de choses pacifique garantis notamment dans les régions de l'Empire chinois voisines des territoires ou ils ont des droits de souverainete, de protection, ou d'occupation, s'engagent à s'appuyer mutuellement pour assurer la paix et la securitié dans ces régions, en vue du maintien de la situation respective et des droits territoriaux des deux Parties contractants sur le continent asiatique."

In the agreement relating to China signed by Russia and Japan in 1907, Article 2 reads:—

> The two High Contracting Parties agree to recognise the independence and the territorial integrity of the Chinese Empire, and the principle of equal opportunity for the commerce and industry of all nations in the said Empire, and they engage to uphold and defend the maintenance of the "status quo" and the respect of that principle by all the peaceful means possible to them.

When we turn to the Anglo-Japanese Alliance signed in London on July 13, 1911, we find that the preamble reads thus:—

> The Governments of Great Britain and Japan, in view of the great change that has taken place in the political situation since the present Anglo-Japanese Agreement was concluded on August 12, 1905, and believing it to be conducive to the general peace and security to amend the said Agreement and adapting it to the changed conditions, have agreed upon the following stipulations in the place of the said Agreement, which have the same objects as the present Agreement, that is to say:—
>
> A.—The consolidation and maintenance of the general peace in the regions of Eastern Asia and of India;
>
> B.—The preservation of the common interests of all Powers in China by ensuring the independence and integrity of the Chinese Empire and the principle of equal opportunities for the commerce and industry of all nations in China:
>
> C.—The maintenance of the territorial rights of the High Contracting Parties in the regions of Eastern Asia and of India, and the defence of their special interests in the said regions.

Again, in the Agreement between Japan and the United States signed on November 30, 1908, the following is one of the clauses:—

> The policy of both Governments, uninfluenced by any aggressive tendencies, is directed to the maintenance of the existing "status quo" in the region above-mentioned (the Pacific Ocean) and to the defence of the principle of equal opportunity for commerce and industry in China.

This is reaffirmed in another clause:—

> They are also determined to preserve the common interests of the Powers in China, by supporting by all pacific means at their disposal the independence and integrity of China and the principle of equal opportunity for commerce and industry of all nations in that Empire.

From these quotations it is abundantly clear that Japan has unreservedly subscribed to the principle of equal opportunity, yet her semi-official spokesman, Baron Shibusawa, says in effect that Japan's permission is required for the exploitation of China by America. If America agrees to co-operate with Japan on Japan's terms she will be assisting the latter to render the Open Door declarations nugatory. By obtaining America's consent to co-operate with her as the managing and directing partner, Japan will have gone far towards establishing her super-Monroe doctrine that she is the door-keeper of China and may open or close the door as she pleases. Will America aid her to make the Open Door agreements mere scraps of paper?

Assuming that co-operation of the type advocated by the Japanese was accepted by America, what would be the actual result of the partnership? Japan has wrested from China the admission that the exploitation of South Manchuria, Eastern Inner Mongolia and Fukien must be confined to Japanese. By compelling China to assent to the closing of the door in these regions Japan violated every one of the agreements quoted above. If America is permitted to supply capital to develop these regions, under Japanese direction, she will be associating herself with a violation of the principle that America herself, through the late Mr. John Hay, brought into existence. She would be condoning the international misdemeanour committed by Japan in 1914 which lead the State Department to put itself on record in the following terms:—

> "In view of the circumstances of the negotiations which have taken place and which are now pending between the Government of China and the Government of Japan and of the agreements which have been reached as a result thereof, the Government of the United States has the honour to notify the Government of the Chinese Republic that it cannot recognize any agreement or undertaking, which have been entered into or which may be entered into between the Governments of China and Japan impairing the Treaty rights of the United States and its citizens in China, the political or territorial integrity of the Republic of China or the international policy relative to China commonly known as the Open Door policy. An identical note has been transmitted to the Japanese Government."

Why did the State Department send notes to Japan and China in these terms? The wording is diplomatic, but the obvious intention of the State Department was to reserve to itself the right to enter, at an appropriate time, a definitely worded objection to the action of Japan in closing the door in certain regions in China. The incidence of the war and the fact that Japan was nominally one of the Entente Powers rendered it undesirable to enter a definite protest in 1914, as the result would probably have been prevention of discussion of the matter on its merits. Nonetheless the caveat was entered and is extant. Obviously co-operation "to the fullest extent" would mean American co-operation in the exploitation of the regions in which Japan has closed the door in circumstances which elicited a veiled protest from America. If American capital thus co-operates without qualification it will stultify the action of the State Department. Moreover America will find herself brought into conflict with every nation possessing interests in China, except Japan, for while Japan has closed the door in regions which she deems her sphere of influence, she demands the right to enter the spheres of other countries. In 1914 she endeavoured to compel China to hand over to her certain railway rights that had already been granted to Great Britain. The attempt was frustrated, but Japan still harbours grandiose commercial ambitions in the Yangtsze Valley and south-west China. If America entered into a partnership with Japan as the managing and directing partner, she would eventually find herself unwittingly in antagonism with the European commercial Powers, though acting for herself she may operate anywhere in China, providing other rights are respected.

The greatest asset that America possesses in China is the good-will of the Chinese people. The fact that America has no territorial designs in China, and the action of the American Government in remitting a large portion of the Boxer Indemnity have created among the Chinese a belief that America is the Power from which fair play and generosity can be expected, and is consequently the Power whose friendship should be sedulously cultivated. The existence of a sentiment such as this would be of infinitely more value, if America engages herself seriously in the peaceful exploitation of China, than co-operation with the country which China particularly fears and dislikes. If America were to co-operate with Japan "to the fullest possible extent" it is certain that the present feeling of goodwill and gratitude entertained by the Chinese towards America would be sacrificed. China does not expect America to give more than moral assistance to preserve China's independence, but she certainly does not expect America to aid and abet the one country that has openly shown its readiness to nullify the principle of equal opportunity which is the only effective safeguard of China's independence. If the Washingtonian policy of avoiding entangling alliances is carried out in the spirit, America will decline to enter into a partnership which would inevitably make her an accomplice in the subversion of China's sovereignty and the nullification of the principle of equal opportunity for the industry and commerce of all nations in China, which America created and has consistently sustained. The result would be the loss of the goodwill of the Chinese people and the creation of hostile sentiments towards America on the part of the commercial nations of Europe, who are also pledged to the maintenance of the principle of equal opportunity. Is Japanese co-operation worth the price?

In conclusion the attention of Americans may be directed to the fact that co-operation between another nation and Japan on the lines now advocated by the Japanese has been "tried out" in South Manchuria. The South Manchuria Railway, the wonderfully efficient instrument of Japanese Imperialism in the region concerned, raised a large amount of money by the issue of debentures in London. Those who provided the money had no voice in the manner in which it was employed. At the present moment British, and incidentally American, trade to cotton goods in South Manchuria has been practically exterminated. British co-operation with the Japanese on Japanese terms has resulted in British trade in a most promising region in China passing to the Japanese. This is a fact that a reference to the Customs Reports will clearly establish. As a result of their experience in South Manchuria the British are not to be wheedled into the "fullest co-operation" with Japan, though Japan is Britain's ally and has as such vast potentialities for good or evil. Is what is not good enough for Great Britain, Japan's ally, good enough for America? It is the solemn and considered belief of the writer that America would sustain irreparable moral and material damage were she to listen to the siren voice of Baron Shibusawa and exchange for Japan's fickle friendship the goodwill of the Chinese and the respect of the European subscribers to the doctrine of equal opportunity in China.

A Briton.

THE HOTCHPOTCH OF CHINESE POLITICS

The complexities of Chinese politics are infinitely more puzzling to the casual observer to-day than they were at any time during the late years of Yuan Shih-kai's life. While that forceful Chinese was able to impose his will upon the nation—or thought he was able to do so—the reason for the strong undercurrent against him was patent. He and the Young China party were as flint and steel. The rebellions and the threats of rebellion against him were but the natural sparks begat of impact between two such adamantine substances. They were expected; but, also, their end was expected when Yuan Shih-kai was gathered to his fathers. And it is because there are still flint and steel and sparks flying promiscuously about, despite the fact that Yuan Shih-kai is dead, that well-wishers of China are uneasy and that more and more talk of the advisability and expediency of foreign control is indulged in by the pessimistic.

While Yuan Shih-kai lived it was argued by his opponents that his retirement from the Presidency in favor of General Li Yuan-hung, or his death, would end for all time the apparently chronic state of rebellion which existed in south and central China. With the elevation of Li Yuan-hung, the popular idol of the 1911-12 revolution, to the Presidency on Yuan Shih-kai's death, it was generally believed that the Chinese people would at last experience the sensation Mencius promised the princes almost three centuries before Christ when he declared that if "a benevolent government be put in practice the people will be delighted with it, as if they were relieved from hanging by their heels." Yuan Shih-kai died on June 6, and Li Yuan-hung immediately assumed Presidential powers and prerogatives, but instead of the "benevolent government" hoped for there has been such a confounding of views and thoughts and ambitions and no government at all that it would be the quintessence of charity to ascribe the resultant anarchy to the light-headedness caused by the nation being upon its feet once again instead of dangling head downwards as in the simile employed so long ago by the philosopher of Mang.

The outstanding feature at the moment is that there is not a scintilla of co-operation in the interests of China between the Government and the Parliament. One is pulling against the other and the contest has ranged what, for simplicity's sake, may be called two large parties—although there is really a plethora of parties—on opposite sides who should, if China is ever to be anything but a subject nation, be pulling stoutly together. They are what are known as the Ming Tang (or people's party—which comprises as to its chief bulk the Kuo Ming Tang) and the Peiyang, or Military Party—an old party organized by the Marquis Tseng during the Taiping Rebellion, fostered later by the famous Li Hung-chang, and later still by Yuan Shih-kai, and now passing into the hands of a group consisting of Hsu Shih-chang (one-time Grand Councillor to the Manchus and Grand Guardian of the Emperor, and among other offices, Chief of the General Staff in 1911), General Tuan Chi-jui (the present Premier), General Feng Kuo-chang (the present Vice-President and Governor of Kiangsu Province), and General Wang Shih-tchen (present Chief of the General Staff). It is noteworthy that these four men were all at one time staunch adherents of the late Yuan Shih-kai, though when he struck for the Throne he did so without their support, and, in fact, in the face of their passive resistance.

The cardinal failure of Yuan Shih-kai to conciliate the Young China Party and his arousal of their antagonism by his dependence upon military force to preserve his power, and later his instigation of the movement to establish a monarchy, has left a grave stigma upon certain elements in the military coterie, and this is a legacy which has not only been handed down to General Tuan Chi-jui, but which has apparently and unfortunately been taken up by him. Why General Tuan Chi-jui, having before his eyes all the reasons for the ignominious failure of his patron, Yuan Shih-kai, should not exert his energies to adopt measures to reconcile the various contending elements passeth understanding. For this perhaps, the Young

China Party is in a great measure responsible, since its insistent clamour for "punishment of the monarchists" was undoubtedly the first note of alarm to the military captains to band themselves together for purposes of self-defence. Regarded from the new-point of the exigencies of political strategy the Young China Party undoubtedly made its first grievous blunder when it failed to listen to advice to silence its demands in this direction, and it has lived to see that what it demanded has been of no avail, and cannot be of avail.

But if the Young China Party, in error or through misguidance, contributed the first stimulus to continued antagonism between the factions, General Tuan Chi-jui certainly perpetuated the split when thoughtful procedure on his part could very well have remedied it. Had he learned the lesson which the past few years have taught he would have avoided the boots of his patron as he would a snare. It was in his power to establish the co-operation for the good of China which Yuan Shih-kai in his egotistic blindness failed to do—more especially as the Kuo Ming Tang later on readily enough evidenced recognition of its mistake and expressed a willingness and desire to bring about a basis of co-operation.

A factor preventing this desideratum was, of course, the Chin Pu Tang—a party originally formed under the ægis of Yuan Shih-kai to oppose the Kuo Ming Tang in the first Republican Parliament, and the instrument used by him to discredit the Parliament and hasten its humiliation if not its overthrow. How that party eventually bit the hand that fed it and by turning on Yuan Shih-kai brought about his downfall and his death is well known. In that enterprise it was working in harmony with the Kuo Ming Tang—always, however, a consistent advocate of constitutionalism and antagonism to the militaristic doctrines of Yuan—and after the successful accomplishment of the revolutionary aim stressed itself while perfecting its own plans, to throw dust in the eyes of the Kuo Ming Tang by persuading the latter to subordinate purely party interests for a united Republican organization. In this it succeeded beyond its expectations, for it found the moderate leaders of the Kuo Ming Tang only too eager to abandon party strife for national unity and progress. Though once again warned strongly that its good intentions were being made the play of political wire-pullers and schemers, whose sense of honor was exiguous in the extreme, the Kuo Ming Tang stood loyally in support of the Chin Pu Tang's declarations of unity, and too late it was disillusioned by the stampede of the Chin Pu Tang in support of a section of the very military whom it had worked with the Kuo Ming Tang to overthrow. This treachery took the Kuo Ming Tang at such a disadvantage that its party standing was jeopardised, but in face of the junction of its pseudo-friends with its old foes the party quickly rallied and in good time managed to establish itself in majority in the Senate if not in the House of Representatives. The result was a straight out fight between the Kuo Ming Tang and the Chin Pu Tang, the latter backed by the Premier and a section of the Peiyang party. With the former was another party headed by Sun Hung-yi, who was appointed by Premier Tuan as Minister of Interior, and later relieved of his post by Presidential Mandate owing to his refusal to comply with the anti-Kuo Ming Tang policy of the Premier. Since his retirement from the Cabinet Sun Hung-yi has made himself a power to be reckoned with and has managed to gather under his banner quite a number of parliamentarians and also a forceful section of military men. With this backing he has allied himself and his party, the Tao Yuan, with the Kuo Ming Tang in their efforts to overturn the Government under General Tuan Chi-jui. Without traversing the details of the conflict during the past month or two the present situation may be summed up as an absolute deadlock, the conditions of which have been set out in the Peking Gazette by a writer, who, being a Chinese, might be quoted to illustrate how the Chinese themselves regard matters:

"'There has been a deplorable lack of mutual confidence between the Government and Parliament.' These are the words of a prominent radical leader in Parliament. Coming, as they do from a radical leader who is generally looked upon as the source of trouble in the present political situation, the words are certainly of great significance. And they are doubly important because they strike the key-note of the present deadlock in Parliament as well as that between the Government and Parliament. The Government has always regarded Parliament as the originator of unnecessary embarrassment, while the latter—at least the parties not on the Government's side—have been treating the Government, i.e., the Premier, as a plotter conspiring to overthrow the Republic once more. Hence the latter has been endeavouring to avoid consulting Parliament, while the latter have sought continually to look into the conduct of the Government. The sending of Tsao Ju-lin to Japan to present the Grand Order of Merit to the Emperor of Japan is a good illustration of this tendency. Had the Government taken the trouble to sound the views of the leaders of the various political parties beforehand, the Premier could have saved all the humiliation which has been cast upon China by a friendly government. On the other hand, had Parliament not been so suspicious of the Government as the result of the latter's many strange actions, things might have taken a different course; and the Government might have been spared its existing embarrassment. This has also been true of the nomination of Cabinet Ministers. Instead of consulting Parliament beforehand respecting the person to be nominated for a post in the Cabinet, the Premier has been in the habit of asking the support of a particular party, i.e., the Chin Pu Tang, which always supports the Government, and leaving it to chance to get the nomination confirmed by the cooperation of the Kuo Min Tang. The result has been a continuous 'loss of face' to the Government. In this respect the course the Government seems to have taken is even worse. Instead of enlisting the sympathy of the opposition for the nomination of a certain person, scurrilous attacks are usually published in newspaper organs, believed to be connected with the Kuo Wu Yuan Cabinet against those parties—the Kuo Min Tang and some of the 'Neutral' parties—which are supposed to be opposed to the nomination in the hope that the opposition may be frightened into yielding to the false public opinion thus created. The result has always proved to be just the reverse. The opposition at once jumps to the conclusion that as the 'government organs' are attacking the opposition without good cause, the Government must be up to some new tricks, such as the overthrow of Parliament. When this stage is reached there is no possibility of any nominee of the Government getting through Parliament since the opposition has the majority in the Senate if not absolutely in the House of Representatives.

"This mutual suspicion exists, unfortunately, also in Parliament. As the result of mutual suspicion between Parliament and the Government, the parties supporting the Government have also adopted an attitude of suspicion towards the opposition, Chin Pu Tang vs. Kuo Min Tang. Hence whatever the opposition says or does is interpreted as calculated to damage the Cabinet or embarrass the Premier. Whatever the opposition says in the House is opposed by the parties supporting the Government because it is suspected that it is impossible for the opposition to say or do anything for the good of the Government. A certain member of Parliament has humorously remarked that the best way to get the support of the opposite party is to criticise the view you wish to support. The enemy is sure to fall into the trap. Mutual suspicion is another cause of the deadlock in connexion with the making of the Constitution. The Democrats want the Provincial System included in the Constitution because they believe, and not without good reason, that without it some ambitious man may again tread the road to an Imperial throne as Yuan Shih-kai did. On the other hand the other party fights to exclude it because it believes, also with good reason, that once the provincial line is drawn too clearly there will be the danger of the provinces trying to become excessively "independent." Remember the views of the two great opposing parties are not the result of sober meditation but the conclusion of persons who look on each other as the destroyer of the nation. The Kuo Min Tang want this because if this is not done the Chin Pu Tang may become a dictator to the people. The Chin Pu Tang do not want that because if this is done the Kuo Min Tang may destroy the effective control of the Central Government.

"The remedy is plain. The Government, being in power and therefore in control of the whole situation, must take the initiative. The Government must try to understand the views of the opposition and endeavour to conciliate it and treat it as a friendly adviser and not as a deadly enemy bent upon destroying the Government. A canvass of the opinions in the opposition ranks shows that there is no substantial truth in the rumour that the Kuo Min Tang are determined to overthrow the present Government whether it is good or bad. On the other hand, it will be sure to obstruct the Government if the latter thinks that it can be baubled or scorned at. The wonder is why has the Government never tried to sound the views of the Kuo Min Tang in matters of national importance?"

What is going to be the outcome of this deadlock cannot be prophesied. The country is full of rumours of a fourth revolution; there is a constant hurry and scurry hither and thither of politicians; there is talk with bated breath of a coup by Premier Tuan to once again abolish Parliament, and most sinister of all is the constant talk of a split of the country and the formation of a South China Republic, this region embracing the provinces south of the Yangtsze. That there is turmoil there is no gainsaying. All that can be hoped is that wiser councils than those now having sway will prevail and that China will be saved from what looks like the inevitable—scilicet, the establishment of a Condominium for at least a generation.

OPINIONS OF THE VICE-PRESIDENT

The unsettled state of politics is greatly deplored by the Vice-President of the Republic, General Feng Kuo-chang, who, however, is stoutly optimistic and regards the present struggle between the various parties as but a natural development of the democratic idea. In a recent interview with a representative of the FAR EASTERN REVIEW he so expressed himself, and urged a suspension of judgment on the part of foreigners on the ground that much of the talk of irresponsible Chinese is purely personal and does not represent any particular party or the real ideas or aims of any party. That there is, however, keen party conflict, he readily enough admitted, though he prefers to view the whole situation broadly and tolerantly. In his opinion sensational and conflicting statements are sure to be heard until political parties have settled down and found their level, but these he urges should not be taken too seriously.

"Just now the country is in great difficulty," he said, "because of the necessity of men trained in administrative work. If government is to be good, the Cabinet responsible for it must have talent and power and must enjoy the confidence of the people. Without credit it can do little. Whereas in the old days officials appointed to high positions were widely known in the country, and reached their respective stations after most gradual promotion, the system to-day enables the most unknown man to aspire to the highest office providing that he can secure the necessary political 'pull.' Men educated abroad, and perhaps well educated, though their knowledge of China is small, are able to return and take up Cabinet office or positions in the provinces, without having received any training in the service of their country and without being possessed of the knowledge of China necessary to acquit themselves properly.

"There is one way out of the trouble although it is difficult, and that is to devise means to give potential officials the requisite administrative experience. We have many men of ability in China: the returned students have ability, but they lack one important thing—experience. Before taking up high and important office they must wait and demonstrate to the people that they have the experience and talent necessary to officiate in China. Without confidence there can be no stability. At this critical time great affairs of State require management by experienced officials with prestige. The foreign educated men must serve as assistants until they are qualified by training and by talent to take up higher posts and win the trust of the people. In short the civil service must be placed upon a proper basis if China is to be got out of the difficulty in which she now wallows. Foreign-educated men base their knowledge on what obtains in other countries, knowing little or nothing of conditions in their own. If I, for instance, would only employ new men the old ones with experience and training would not serve under them, and if the new men employed only new men then a condition would arise where the employed would be no less ignorant of China than the employers. It appears to me, then, that the best course to take is for the old experienced officials to decide what should be done and have it executed by the young ones. The whole nation would then soon learn to appreciate the talent of the new men and would ultimately have confidence in them. The high positions in China are very few and these should be filled by trained officials to dictate the policy to be carried out by the lower officials. Within a few years the talented would soon assert themselves and be qualified to step into the higher rank upon a vacancy being created. If this arrangement were continued for ten years then China would be in a sound position so far as officials were concerned. There would be two good results from the adoption of the plan, at any rate. The new people having positions under a proper system would not make trouble because they would be satisfied, and leaders with ambition could not get followers because they would already be employed."

General Feng Kuo-chang, in touching upon general conditions, expressed the hope that matters would soon adjust themselves. He said that he was working for that end, but recognised that the struggle to establish a satisfactory government would be a long one. So far as the future was concerned he emphasised that he was in no way an aspirant for presidential honours, and wished that to be generally understood, since a section of politicians were already using his name in that connexion.

MARITIME CUSTOMS REVENUE FOR 1916

The Maritime Customs Revenue for 1916 shows an increase of over Haikuan Taels 1,000,000, the total collection reported being in round numbers Haikuan Taels 37,750,000 (at average exchange 3s/3/$\frac{13}{16}$=£6,262,174) as compared with Haikuan Taels 36,747,000 (at average exchange 2s/7/$\frac{1}{8}$=£4,765,626) in 1915.

The following are in round numbers the collections at the principal ports:

Harbin	Hk. Tls.	936,000	a decrease	of Hk. Tls.	188,000
Antung	,,	742,000	an increase	,, ,,	120,000
Dairen	,,	2,031,000	,, ,,	,, ,,	291,000
Tientsin and Chinwangtao	,,	4,690,000	a decrease	., ,,	40,000
Kiaochow	,,	1,698,000	an increase	,, ,,	1,250,000
Hankow	,,	4,011,000	,, ,,	,, ,,	143,000
Shanghai	,,	11,324,000	a decrease	,, ,,	86,000
Swatow	,,	1,124,000	,, ,,	,, ,,	171,000
Canton	,,	2,222,000	,, ,,	,, ,,	176,000

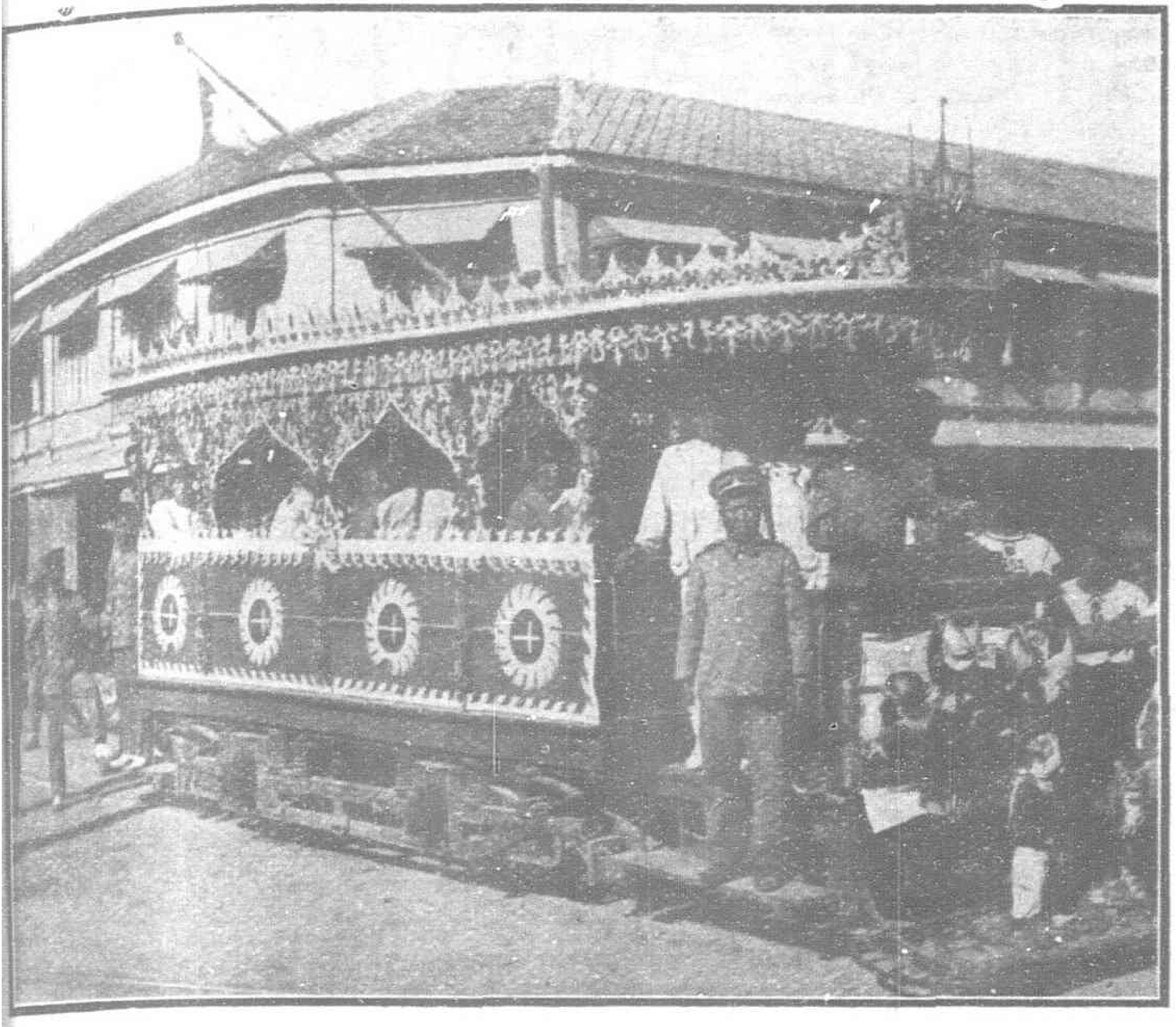
The collections at the following ports form records: Antung, Dairen, Changsha (Hk. Tls. 624,000), Hankow, Nanking (Hk. Tls. 383,000) and Nanning (Hk. Tls. 163,000).

All foreign obligations secured on the Customs revenues have been fully met to 31st December, 1916.

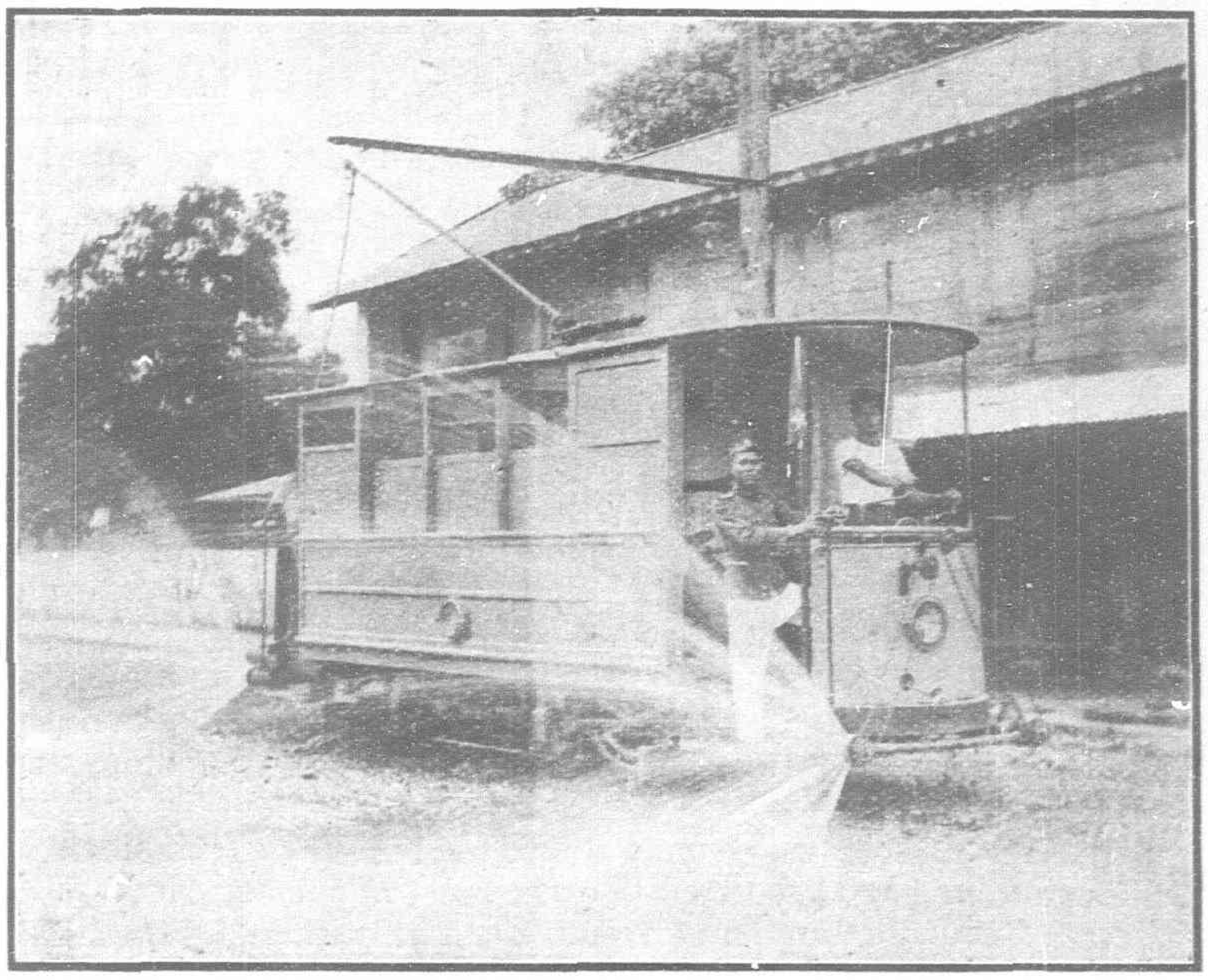
JAPAN-HAWAIIAN WIRELESS

The new wireless system was opened on November 16 between Tokio, Hawaii and San Francisco when messages were exchanged between the Emperor of Japan and President Wilson; the Governor of Hawaii and Count Terauchi, and the Ambassadors at Tokio and Washington, all expressing good will and hopes of an increase in friendly relations.

The two stations are located at Funabashi, Chiba in Japan and at Kahuku, Oahu, in Hawaii. The commercial rate for messages between the two points is almost thirty per cent less than the cable charges. Messages will be exchanged at two periods—between 6 and 8 o'clock in the evening and between 10 o'clock at night and 2 o'clock in the morning.



Tram Car of Siam Electricity Company Decorated for Festival



Car Equipped for Use in Sprinkling Streets of Bangkok

SIAM ELECTRICITY COMPANY, LTD.

Bangkok is situated on both sides of the River Menam Chow Phya but only the part on the East bank of the river has proper streets and roads. The population is about 650,000. The Tramway system is owned by two Companies but the Siam Electricity Co., Ltd. holds a controlling interest in the other Co. The Siamese Tramway Co., Ltd. and both systems are operated by the Siam Electricity Co., Ltd. The Line is single track, 1 meter gauge, and the total length is 23 miles. One of the lines through the main artery of the business district, the Charoen Krung Road, is exceedingly well patronised. The principal income is derived from native passengers as the Europeans form a too small proportion of the population to be reckoned with. The cars have first and second class compartments and the fares are on the Zone system, the scale being 1 section of 3,000 meters for 6 Tical cents, 2nd class and double for 1st class (1 tical = about 1s 6d.). On the main line are used double motor cars with trail cars. Trucks are partly Brill 21 and partly Peckham 7B with General Electric Co.'s motor equipment. The Siamese Tramway Co.'s cars have Dick Kerr & Co.'s equipment. The total number of cars is 140 Motor cars and 40 Trail cars. There are fixed stopping places along the line and the cars run from 5.30 a.m. to approximately 11 p.m. During the festivals a great strain is put on both cars and personnel, huge crowds having to be accommodated. Most of the streets are narrow and the traffic very congested, jinrickshaws, motor cars and carriages running up and down the whole day. In spite of this few fatal accidents take place. The operating staff consists of natives under a European Traffic Manager. The Company also sprinkle the streets on which their lines are laid to the whole width and provide fire-protection by means of steam and electric pumps mounted on tramcars.

The *Power Station* of the S. E. Co. supplies continuous current (500-550 volts), for the tramways and alternating current for light and power. The alternating current hitherto supplied has been single-phase, 2,000 volts, 100 cycles transformed to 100 volts, when consumed. At present the main part of the alternating current plant is being altered to three-phase, 50 cycles, 3500 volts distributed through a four wire system.

The machinery consists of:—

Two 200 K. W. enclosed, self-lubricating, vertical compound steam engines, 400 r.p.m. Engines built by Browett & Lindley, Dynamos by Dick Kerr & Co., Ltd., 1905.

One 750 K. W. triple expansion engine for steam of 160 lbs. per sq. in. pressure and 300° C. total temperature. 120 r.p.m. Engine built by Burmeister & Wain, Copenhagen and Dynamo by Siemens-Schuckert Werke 1909.

To this engine belongs: one 150 K. W. Motor-generator (Brown Boveri & Co., 1908) for producing single-phase current, when the tramcar load is not sufficient for the engine.

Two four-cylinder Diesels internal combustion motors of respectively 150 and 200 K. W., 187 r.p.m. The fuel is crude earth-oil from Borneo. Burmeister & Wain-Siemens-Schuckert Werke 1908 and 1909. In order to prevent the chambers and channels of the motors from being choked up with mud the same water is constantly circulating through the motors and cooled down in a cooling tower; only specially cleaned water is used for maintaining the proper level in the pond below that tower.

One 150 K. W. enclosed, self-lubricating, vertical, compound steam engine, 375 r.p.m. Bellis & Morcom—General Electric Co. 1907.

One 350 K. W. vertical triple expansion engine, 125 r.p.m. Burmeister & Wain—Siemens & Halske 1903.

One 600 K. W. vertical Curtis Turbine, 2000 r.p.m. Temperature of steam 300°C. General Electric Co. 1906.

Two 1,200 K. W. horizontal Turbo-generators, 3,000 r.p.m. Temperature of steam 350°C.

To this plant belongs:—

One 700 K. W. Motor Generator for producing continuous current for the tramways (running alternatively with the 750 K. W. triple expansion engine).

One 500 K. W. Motor Generator for producing single-phase current (running instead of the single-phase steam engines).

The three-phase plant is supplied by the A. E. G. Berlin 1911.

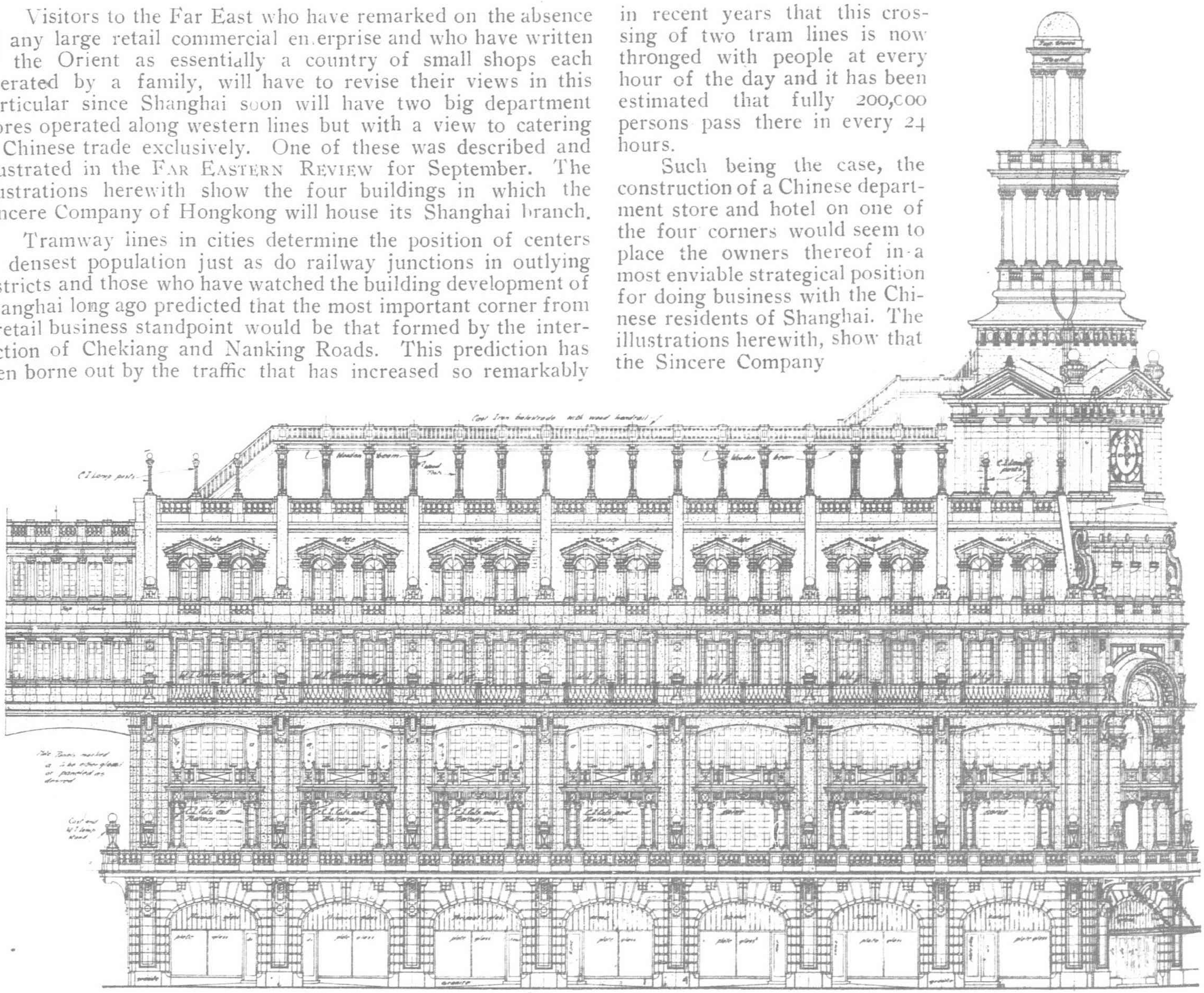
Ten Babcock & Wilcox boilers fitted with internal superheaters for superheating the steam up to 300 or 350°C. Working pressure 160 lbs. per sq. in. Heating surface of each boiler 2,852 sq. ft. Paddy husk is usually burnt in the furnaces.

NEW DEPARTMENT STORE AND HOTEL FOR SHANGHAI

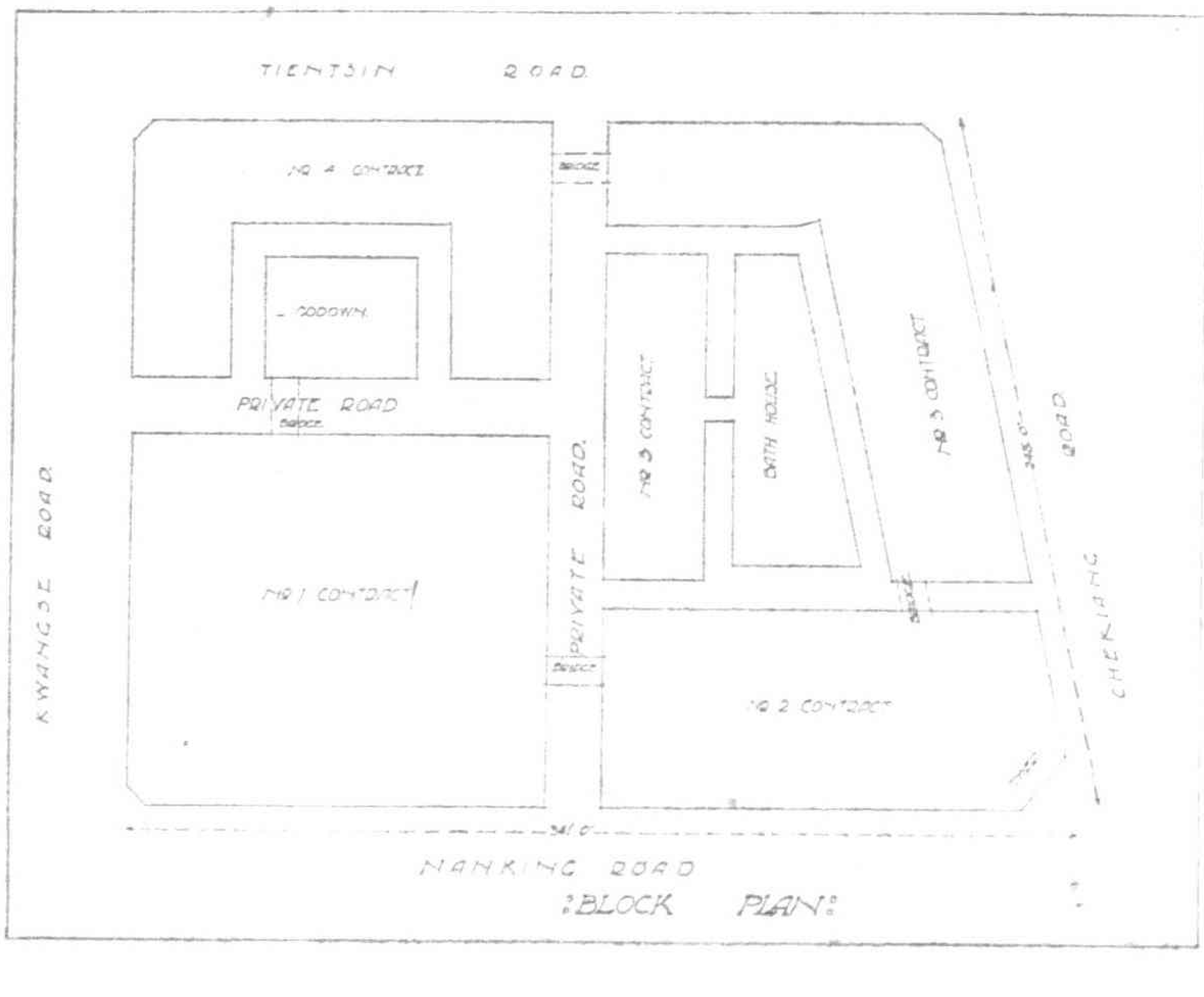
Visitors to the Far East who have remarked on the absence of any large retail commercial enterprise and who have written of the Orient as essentially a country of small shops each operated by a family, will have to revise their views in this particular since Shanghai soon will have two big department stores operated along western lines but with a view to catering to Chinese trade exclusively. One of these was described and illustrated in the FAR EASTERN REVIEW for September. The illustrations herewith show the four buildings in which the Sincere Company of Hongkong will house its Shanghai branch.

Tramway lines in cities determine the position of centers of densest population just as do railway junctions in outlying districts and those who have watched the building development of Shanghai long ago predicted that the most important corner from a retail business standpoint would be that formed by the intersection of Chekiang and Nanking Roads. This prediction has been borne out by the traffic that has increased so remarkably in recent years that this crossing of two tram lines is now thronged with people at every hour of the day and it has been estimated that fully 200,000 persons pass there in every 24 hours.

Such being the case, the construction of a Chinese department store and hotel on one of the four corners would seem to place the owners thereof in a most enviable strategical position for doing business with the Chinese residents of Shanghai. The illustrations herewith, show that the Sincere Company in planning the extension of its business from Hongkong to Shanghai has determined upon having buildings worthy the site. The advertising value of suitable premises doubtless had a part in fixing the determination of the company to have not only the most prominent site in Shanghai, but to erect thereon the most imposing buildings possible to obtain. While no accurate statement has been made as to the probable cost of the buildings, those familiar with building conditions in Shanghai estimate the sum necessary to carry out the company's plan at not less than seven or eight lacks of taels, a matter of close to a million Mexican dollars.



BLOCK NUMBER TWO, NANKING ROAD ELEVATION OF SINCERE BUILDING

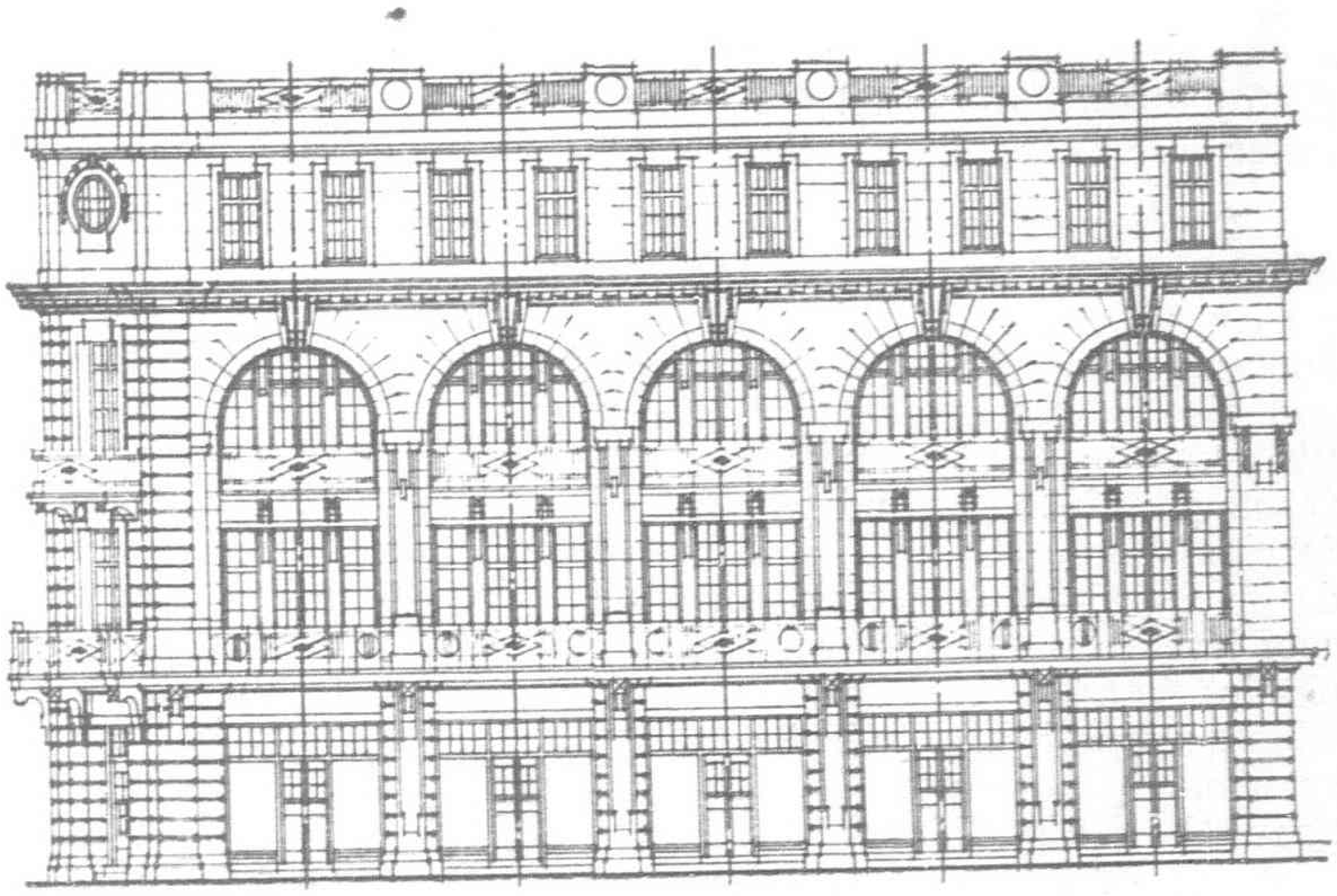


BLOCK PLAN

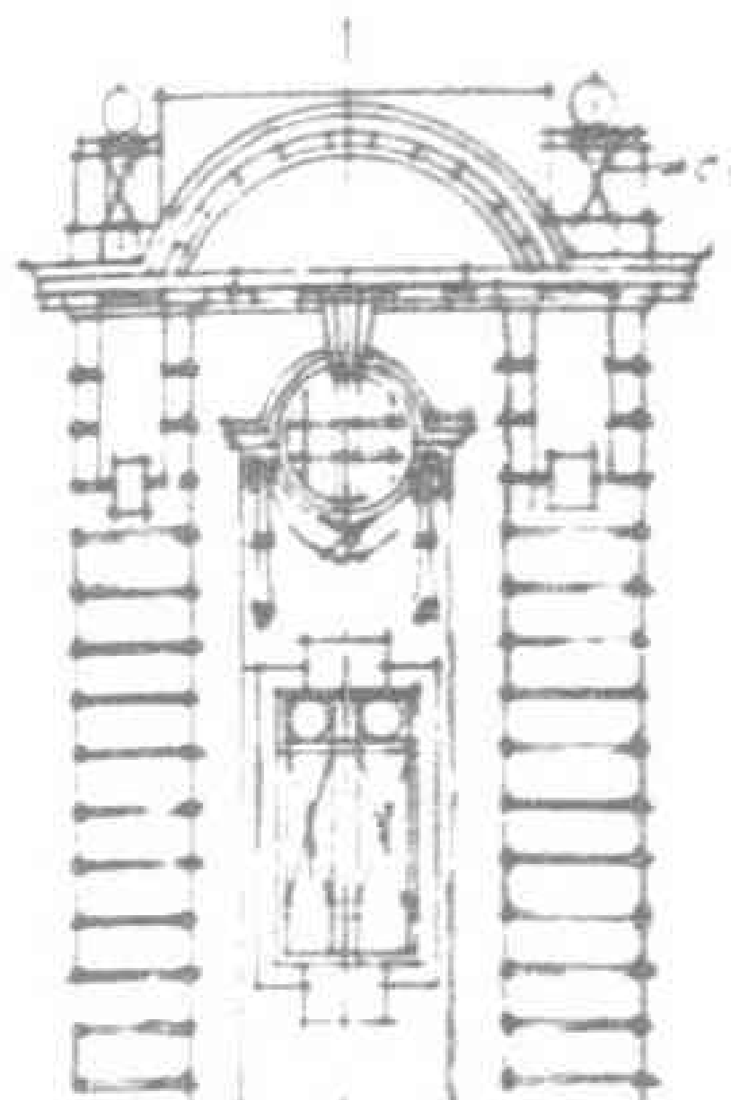
The illustrations are from drawings and show the groups of four buildings which are to stand upon the magnificent site (see block plan) fronting the Nanking, Chekiang, Tientsin and Kwangse Roads in the very centre of the Chinese section of the Settlement, the Nanking-Chekiang Roads crossing being one of the busiest in Shanghai if not the busiest in the Orient. The premises, which are approximately 340 feet on the Nanking Road and 240 feet deep along the Chekiang Road, are divided by private roads into four separate buildings and connected up by bridges at the roof levels to provide a promenade on the flat roofs for interested Chinese. All the buildings will be carried out in reinforced concrete and the architectural style is a free treatment of English Renaissance.

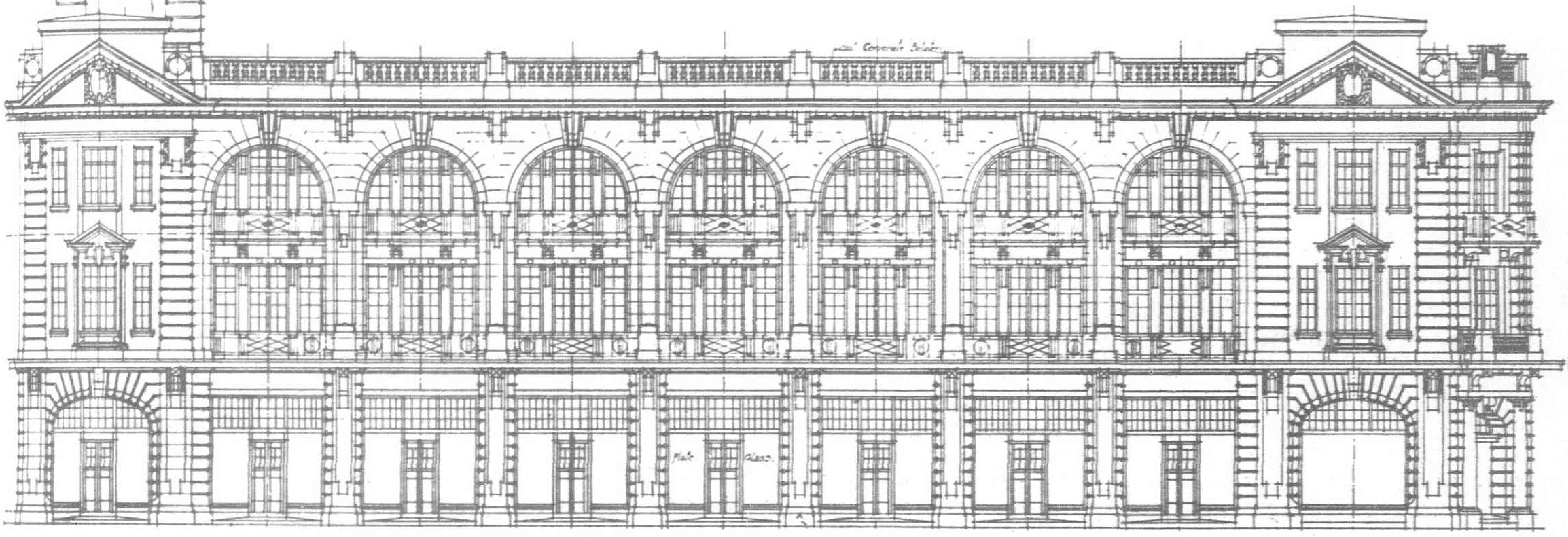
The first contract comprises a building on the south, west corner of the site, 150 feet frontage to Nanking Road and 130 feet deep, part of which is to be the Sincere Store, 94 feet by 120 feet to be four stories high and the remainder a hotel five stories high. The store will be served on each floor by two lifts and provided with ample fire proof staircases and will be fitted in an up-to-date manner in every part.

The hotel, which will cater for Chinese accustomed to foreign manners and customs, will be fitted up in the best manner and will comprise a large lounge on the ground floor and bedrooms on the four floors above and a tea garden on the roof. All floors will be served by a lift in conjunction with

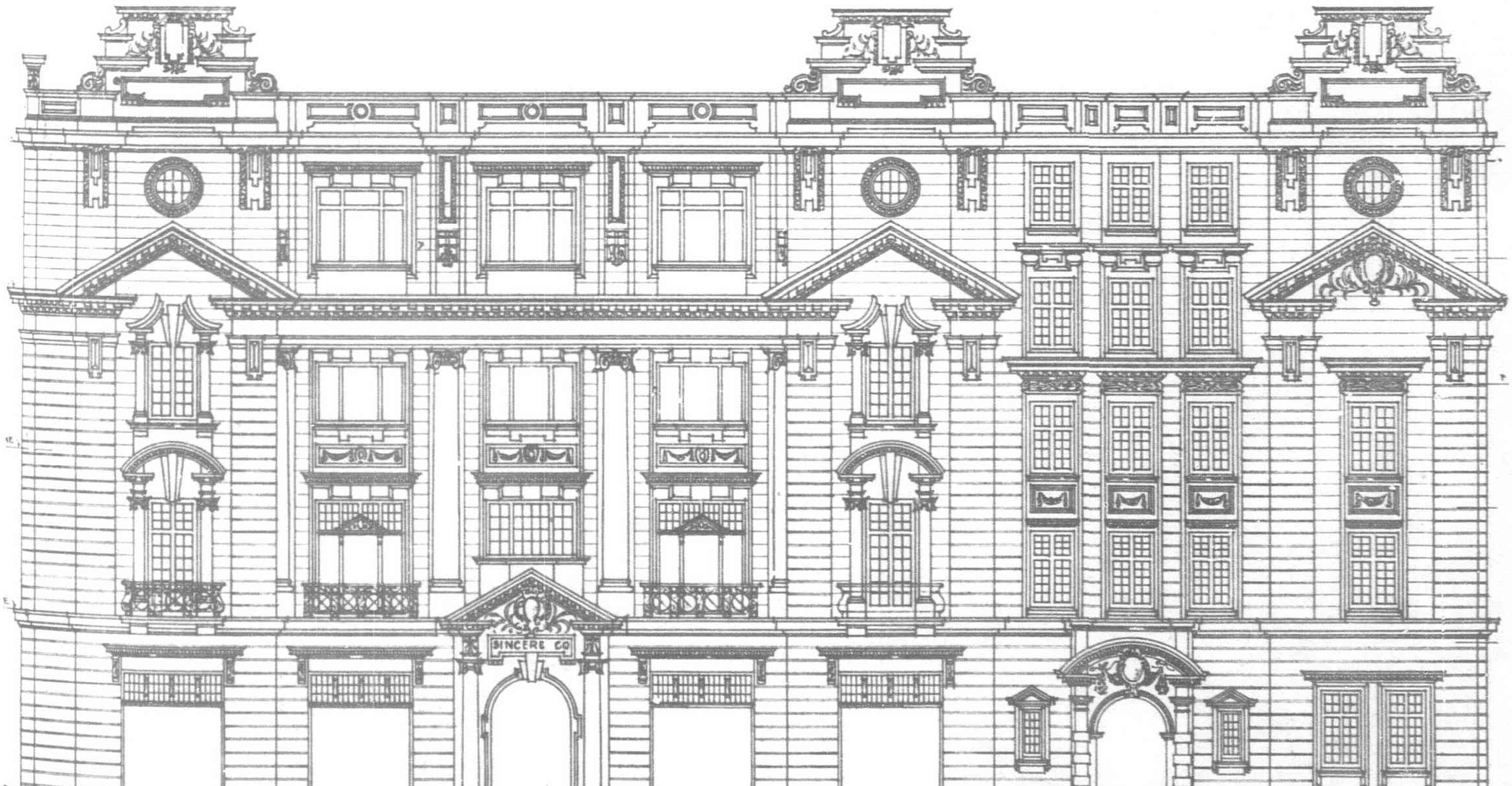


Elevation to Kwangsi Road Side of Block Four





Chekiang Road Side of Block Three



Elevation of Block Number One which will be Connected by Bridge with Block Number Two on Opposite Page a wide staircase. The entrance will be from the Nanking Road. Both the store and hotel are to be heated by low pressure hot water system supplied by the Shanghai Waterworks.

The second contract is on the Nanking and Chekiang Roads corner and is five stories high, having an entrance on the corner which serves a large tea shop on the first and second floors and an annex to the Hotel on the third and fourth floors, and also access is gained to the roof garden and pavilion by two express lifts from this entrance. The remainder of the frontage to Nanking and Chekiang Roads is to be occupied by foreign shops. On this most important corner a tower has been designed to be 150 feet high, having an iron staircase from the roof level to the turret from which a magnificent view may be obtained and which ought to prove popular to the Chinese. This building is also to be heated by the low pressure hot water system. A large clock is to be provided in the tower 80 feet above the footpath level.

The third contract is on the Chekiang and Tientsin Roads and will be three story foreign style for shops and will have a roof garden. Provision has been made for a Cinema exhibition on the roof, part of the auditorium being covered over by a roof, the remainder open.

In the centre of this block a modern bath house is to be erected for Chinese. There will be a staircase tower on this block to be carried up to the level of the roof of the second portion and connected with it by a bridge. The fourth building is to be four stories high, the lower two floors being intended for Chinese shops in the foreign style. The two top floors are to be occupied by the employees of the Sincere Company.

At the rear of this block there is a two storied godown in connection with the store, and the two stories on top are taken up by dinner and recreation rooms for the employees. Adequate kitchen accommodation is provided, all connected up to the store and hotel by enclosed bridges. The lifts to the first portion are to be provided and erected by Smith Major and Steven, Scott Harding & Co., agents.

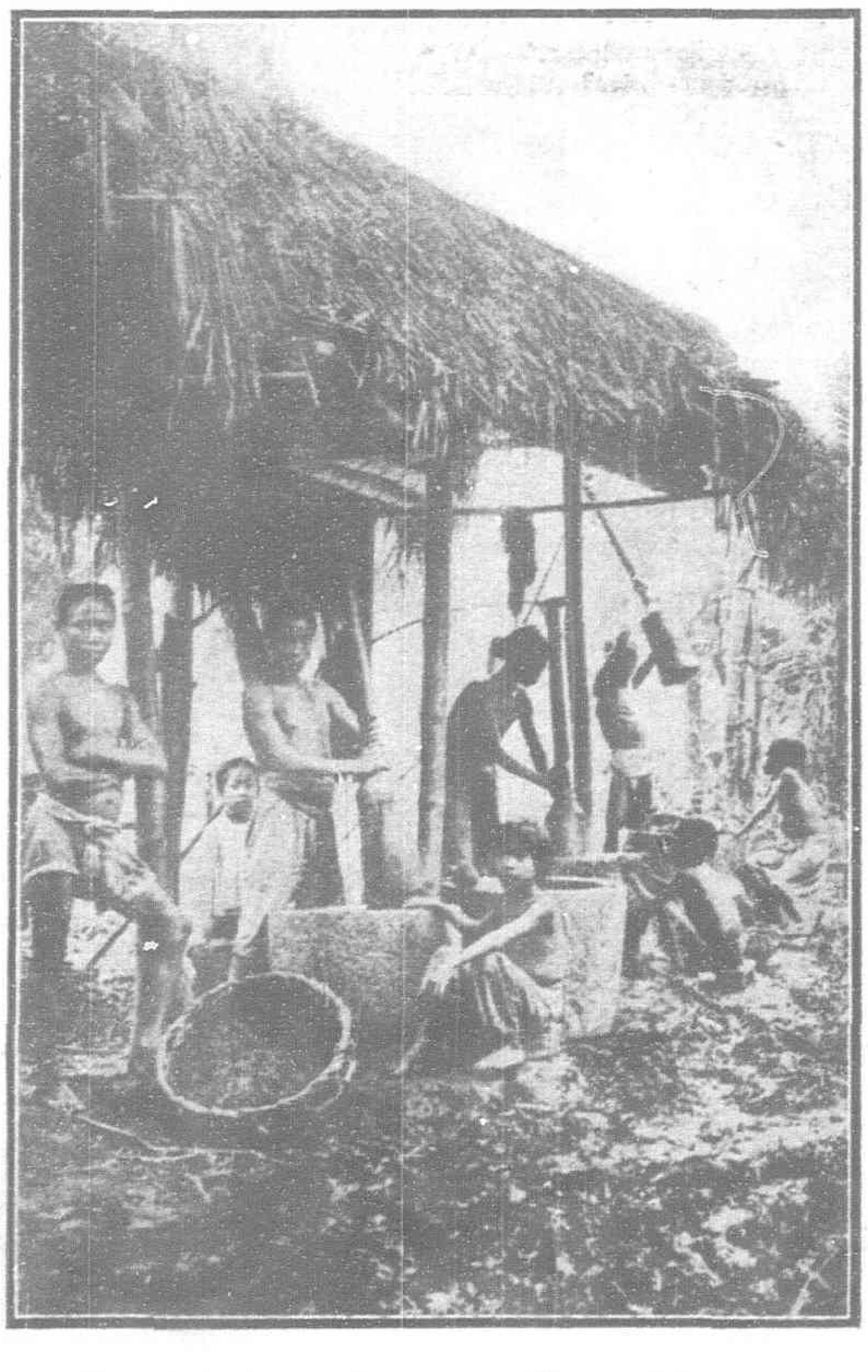
The marble work and Japanese stucco are to be carried out by Tankai Co. The contractor for the first portion is Koo Lan-chow, second portion Sing Woo-kee, third and fourth portions is Sing Jin-kee. The Architects to the Sincere Company are Messrs. Lester, Johnson and Morriss, Siking Road, Shanghai.

THE PAPER VILLAGE OF TONKIN [*]

Paper is one of the chief articles of native consumption of French Indo-China. It is burnt in connection with many religious rites and is extensively used in commercial transactions. A great deal of this paper is imported from China; but in several places, particularly in Tonkin, the natives attempt to supply their own market. A little suburb of Hanoi, the capital of Tonkin, owes its name to the fact that nearly all of its two or three thousand inhabitants gain their living by making paper.

The Village du Papier is located on the edge of a marsh two or three miles from the city, and the constant employment of water in the industry of the village, makes it muddy and disagreeable even in the dry season. The paper is made from the bark of a so-called "paper tree," a species of mulberry found on the Black River in upper Tonkin. This bark is soaked in lime made from the limestone of the village, heated by crude furnaces fashioned by hand under natural limestone vats. pounded by a pestle into a fine mesh, washed in special pools to remove coarse substances, then dissolved into a very thin paste. This paste is then dipped by bamboo-screen sieves, about 12 x 24 inches in dimensions. The slight film of paste covering the screen is deposited on top of others similarly collected, and each is taken separately or several films are taken together and spread with a brush on cement radiators to dry. A single sheet is as thin as tissue; but the desired thickness may be obtained by spreading several films on the radiator and drying them together or by pressing together, or pasting together after drying, the requisite number of sheets. The product is then tied up in small bales and carried to the native market in Hanoi.

This curious village may be reached by tramway or by ricksha from the capital. As a study in native industries it is most interesting and instructive and is well worth a visit by those who are not too sensitive to mud and smells.



Pounding the Bark for Paper Making

Washing the Paste

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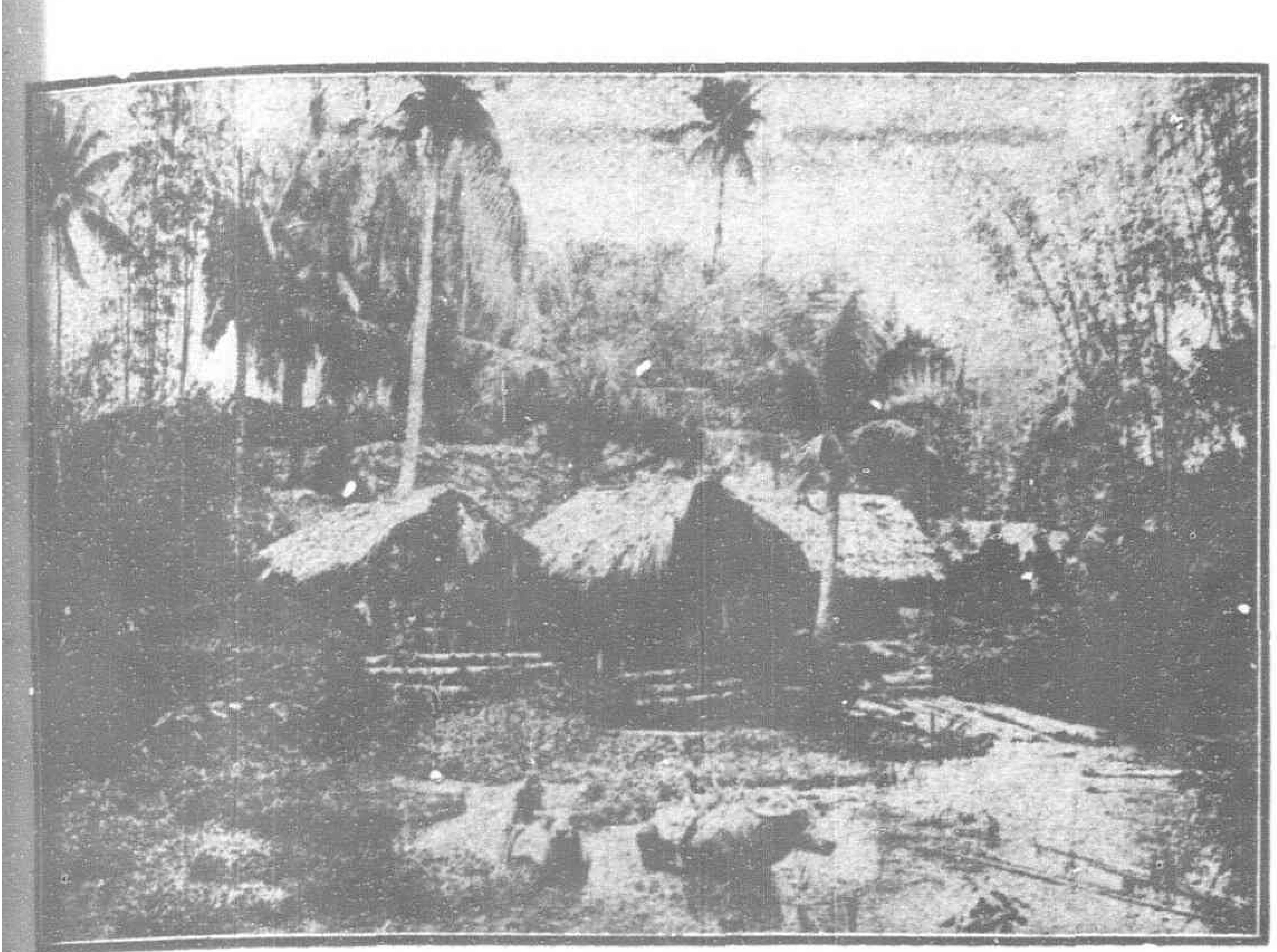
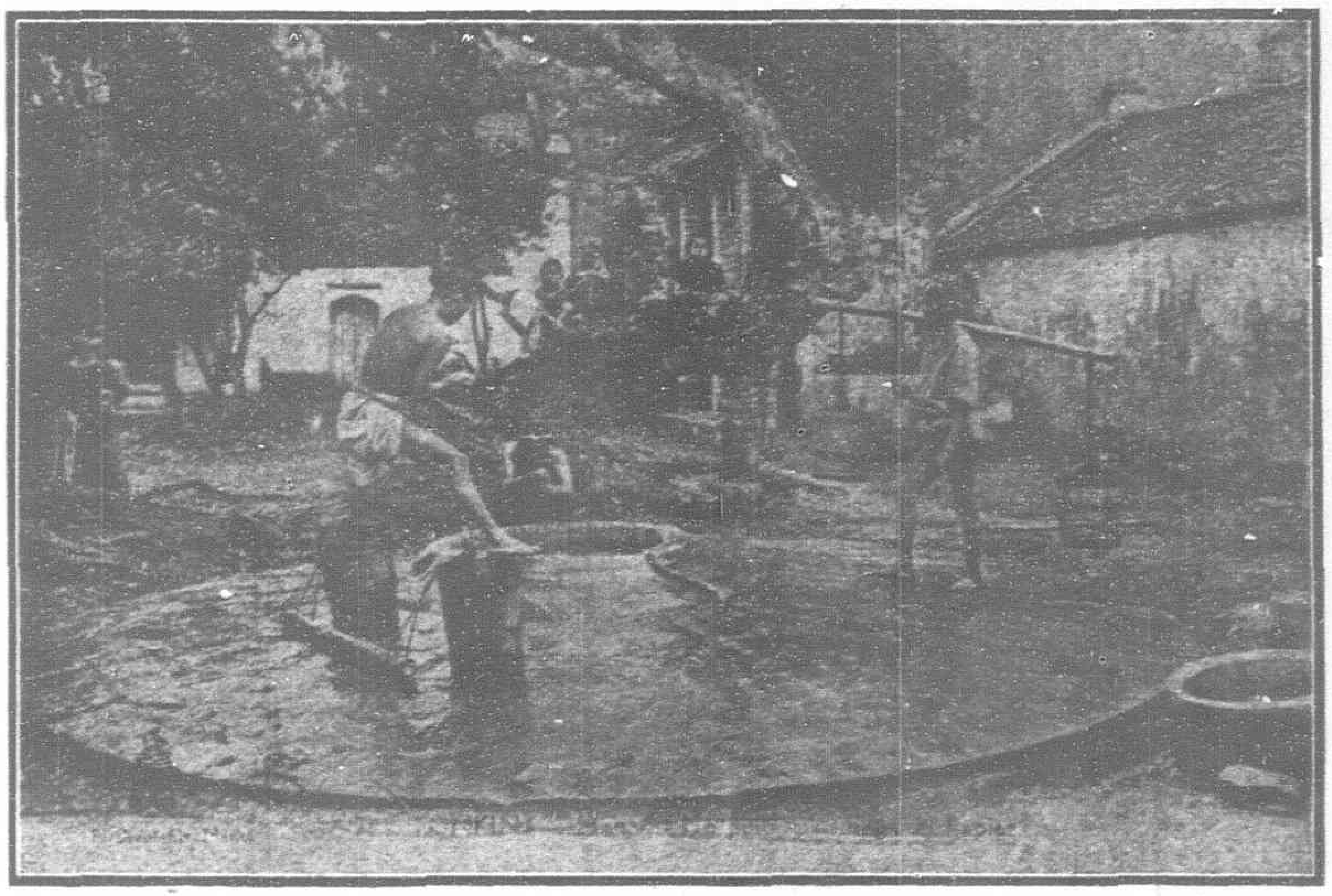
[*] Photographs and description by Mr. Lawrence P. Briggs, U.S. Consul at Saigon.

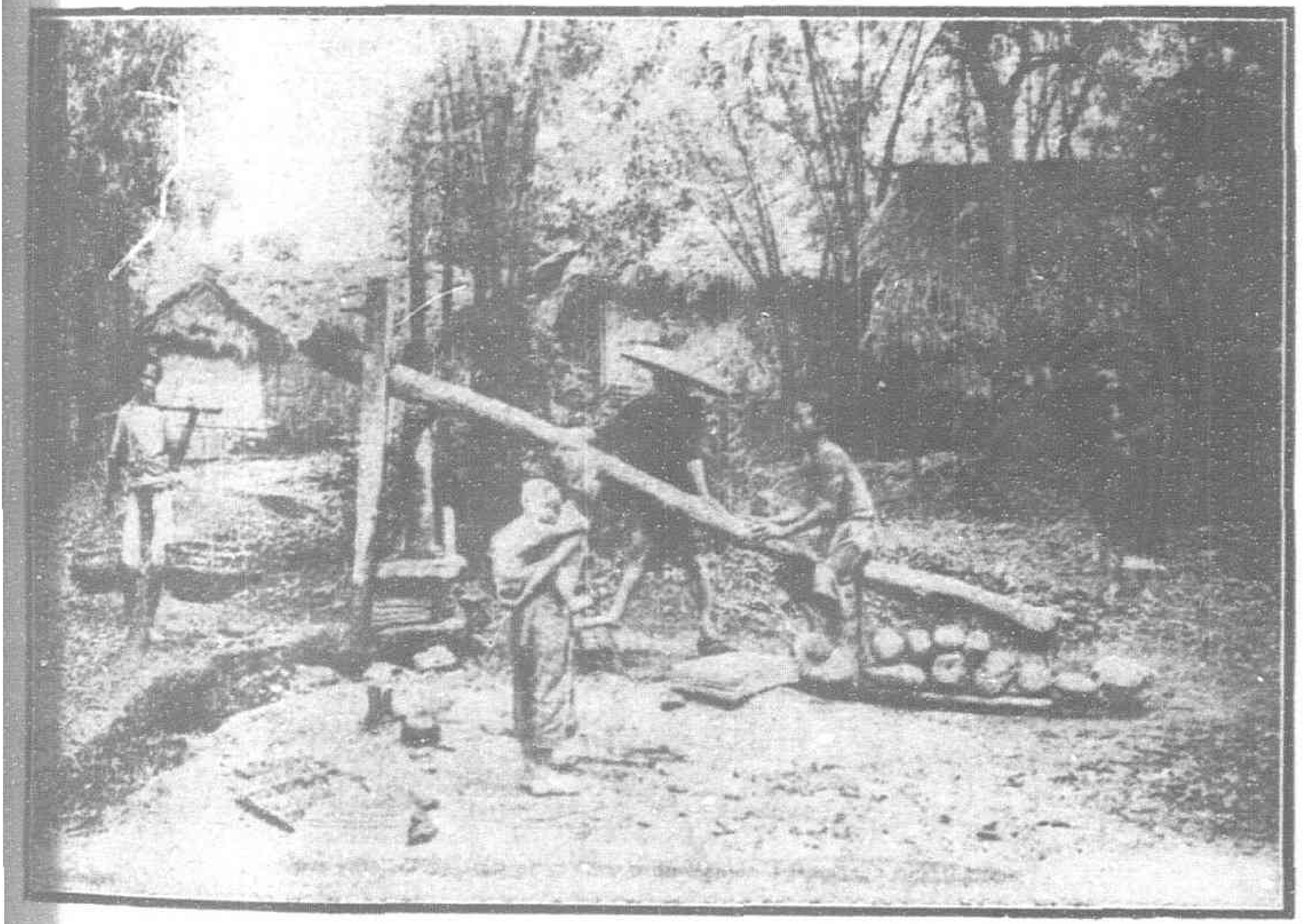
SCENES IN TONKIN'S PAPER VILLAGE



General View of Paper Village



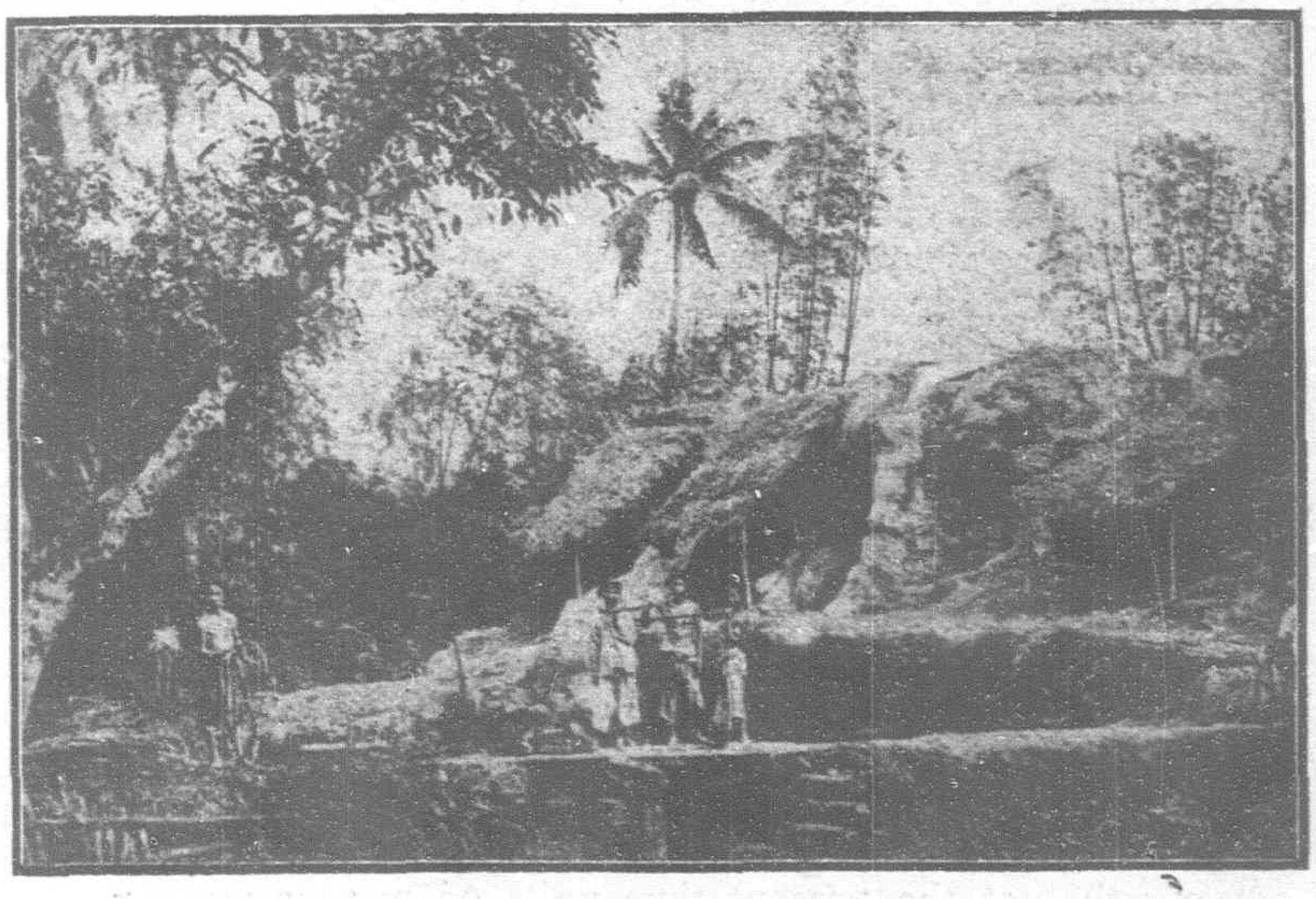
Natives at the Well



Dipping the Pulp

Pressing the Sheets of Paper

Limestone Vats



Furnace for Burning Limestone

MEMORANDUM ON THE REFORM OF THE LAND TAX SYSTEM IN CHINA

[By W. F. Willoughby, Deputy Legal Adviser to the Chinese Government]

Continued from the November issue

Part. II.—The Assessment of Land: 1. Introductory Remarks. 2. Character of Assessment Data Required.—(a) Identification Data; (b) Location; (c) Area; (d) Use of Standard Unit of Measurement; (e) Character of Land; (f) Name and address of Owner or Occupier. 3. Organization and Conduct of Work of Assessment. 4. Desirability of a Cadastral Survey. 5. System where a Cadastral Survey is not Feasible. 6. Administration Organization Required for Making the Assessment. 7. Organization and Work of the Central Office. 8. Use of Forms for the Description and Valuation of Lands. 9. Adoption of Standards of Value. 10. Organization of the Field Force of Assessors. 11. Adjudication of Disputes regarding Assessments. 12. The Revision of Assessments.

Identification Data:—By data for the identification or designation of land is meant some means by which each piece of land may be described for entry on the tax rolls; that is the lists of lands taxed. These data are intended to serve the same purpose as the description of lands that is given in deeds of conveyance. To attempt to enter upon the tax rolls a full description of each piece of land taxed would not only involve a great amount of labor but would give rise to many difficulties. It is highly desirable, therefore, that some briefer system of designation, as, for example, by numbers, should be adopted that should be uniform for the whole country. If, as is desirable, maps are prepared showing the location and boundaries of all pieces of land, it will be possible to give to each piece of land a number on the map and then to make use of these numbers for the designation of pieces of land on the tax rolls. Until the necessary surveys for such maps are made, some other method of designation will have to be employed.

Location:—By location is meant primarily the designation of the province, district and sub-division of the district in which each piece of land is located. If feasible, it is desirable to carry this designation of location still further and to give the location of each piece of land in reference to streets in cities or natural landmarks in the country, such as canals, roads, rivers, etc. If sufficiently precise this designation of location will serve as the identification data for individual properties.

The desirability of knowing the province and district in which each property is located is obvious. In preparing the tax rolls the properties should be grouped according to district and provinces. This makes it possible to know the total assessment and the total amount of taxes due for each sub-division. Such a grouping is also necessary in order that the work of collecting the taxes due may be distributed among collectors each having the duty of collecting taxes in a particular district.

Area:—The necessity for information concerning the area of each piece of land is evident. Unless this is obtained it is impossible to determine whether the value placed upon a piece of land is a proper one or not, and also whether there has been a complete assessment of the land in a district. In Porto Rico this information was used with great advantage for the purpose of verifying the completeness with which the work of assessment had been done. The total area of a district was known. If the total area of the land assessed fell short of this area to any considerable extent, knowledge was thus furnished that all the land had not been assessed. In the absence of detailed surveys and maps this was the most valuable check that the central office had on the thoroughness with which the work of assessment in the field had been performed.

Use of Standard Unit of Measurement:—In stating this area, it is hardly necessary to say that use should be made of a uniform or standard unit of measurement. The writer understands that at the present time units of measurement are not uniform throughout China. This being so, it may be necessary to make use of two units, the local unit and the one adopted as the standard unit by the central office. Thus the original return made by the assessor may be in terms of the local unit and the work of converting this into the standard unit be performed by the central office. In this connection the suggestion is made that the making of this assessment may furnish an opportune time and occasion for the introduction or application of a standard unit of surface measurement throughout the Republic.

Character of Land:—By character of land is meant the nature of the use for which the land is adapted. This, of course, together with the area, are the factors determining the value. In securing information concerning character it is important to make a distinction between the use to which the land is best suited and the use to which it is actually put. Thus, for example, valuable farm land may be allowed to remain idle, land suitable for building purposes may be devoted to crops, etc. This distinction is important since the use to which land is best adapted, rather than the use to which it is actually put, is the element which determines, or should determine, its value. At the same time it is highly desirable to know what is the use that is actually being made of the land. The presumption, of course, always is that the land is used in its most effective way. The securing of this information in detail is very essential, not merely for the purpose of furnishing information which is of great value to the government, but to enable the central office to check and control the work of the assessors, and to give to the central office the information which will enable it to pass upon protests made by landowners against the valuations placed upon their properties.

Name and Address of Owner or Occupier:—It has been pointed out that, under the principle of taxing the land rather than the landowner, it is not necessary for the government to concern itself with who are the owners of the several pieces of land assessed. This is true after the system is once firmly established and in full running order. While the system is being installed, it is necessary, however, that the government should have knowledge of who the owners, or persons otherwise interested in the land, are. It thus should know with whom the matter of disputes arising out of the work of assessment should be taken up. Some years, moreover, will lapse before landowners will recognize that the responsibility rests upon them to come forward and pay the taxes assessed against their lands without being notified that such payments are due. During this period, the government, though resting under no legal obligation to do so, should use its best efforts to notify taxpayers regarding their tax obligations. Finally the names of the landowners or occupiers will aid greatly in the identification of the several pieces of land, pending the time when a uniform scheme of designation can be worked out and applied.

Value:—The last item of assessment data indicated as required is the value of the land. This is the information constituting the real purpose of the assessment. The rest is but collateral data to the end that this information may be obtained and properly utilized. As indicated, the return should show both the value per unit of measurement and the total value. The value per unit is necessary, not only as giving information which in itself is of value, but as furnishing the information absolutely essential if the central office is to check the work of the assessors and determine whether lands are or are not being assessed at their proper value. In furnishing this information there arises the same need for the employment of a uniform or standard monetary unit as was presented in the question of making returns regarding areas. This probably means that the returns will have to be made in the units locally in vogue and these figures subsequently converted by the central office into some standard unit such as the dollar.

Organization and Conduct of Work of Assessment :—Having determined the character of the information that must be obtained, in making an assessment of land for purposes of taxation, the next step consists in devising the means by which these data will be obtained. This work may be divided into two tasks:—(1) that of securing a complete list of all lands and their areas, and (2) that of describing and valuing the lands so listed.

Desirability of a Cadastral Survey :—There is but one way by which this first class of information can be secured in a complete and thoroughly satisfactory manner—that of having a complete cadastral survey made of the whole country. By a cadastral survey is meant a survey which will determine and locate the boundaries, not only of political subdivisions of the country, but of all individual holdings of land into which the country is divided. Where this is accurately done it is impossible for any piece of land to escape being listed or its area to be inaccurately stated. It moreover becomes possible definitely to identify each piece by assigning to it a number or other designation on the maps giving the results of this survey.

System where a Cadastral Survey is not Feasible :—Though it is well to have in mind the theoretically desirable, it must, however, be recognized that this ideal can not at once be attained. The making of a complete cadastral survey is a monumental undertaking. For a country such as China it would require many years to complete and would involve expenditure of millions of dollars. To await its completion would thus mean postponing for years the putting into execution of a reformed system of taxation. Such a postponement would be in the highest degree regrettable. This being so, China while recognizing the desirability of this work, and taking steps for its ultimate accomplishment, should seek other means of securing this information which though less effective, would represent methods that may be immediately applied.

In the assessment of land in Porto Rico this same problem had to be faced. There it was decided to postpone for the future the making of a cadastral survey, and to proceed at once to the making of as complete a list of lands as could be secured by personal investigation on the part of the agents entrusted with the work of making an assessment proper, that is, of describing and valuing the several pieces of land. This involved the division of the country into districts corresponding to the political sub-divisions of the country and the subdivision of these districts into smaller districts of such a size that a single assessor or a chief assessor with his assistants, could travel over the district and, by personal inspection, note, list, and assess all lands situated within it.

Though these assessors did not have the task of surveying their districts they were instructed, when feasible, to prepare sketch maps, or sketch maps were prepared for them, on which were to be entered, with as approximate accuracy as circumstances would permit, the several properties as they were assessed. These sketch maps were prepared in outline from such maps of the provinces and their subdivisions as might be in existence. They were of course made on a much larger scale than the maps from which they were prepared. On these sketch maps were then entered as accurately as could be done all natural and artificial features, such as roads, rivers, canals, etc. Especially was the effort made to note all roads whether public or private. Equipped with these maps, the assessors were in a position to traverse each road and indicate, at least roughly and approximately, all properties abutting on, or reached by these highways. In doing this work every possible use was also made of such records of pieces of land and of landowners as were in existence, and of the knowledge possessed by local authorities.

This, or some similar method, is the one which will have to be employed in China, unless the work of installing a new system of taxation is to be indefinitely postponed. It is not pretended that this system is in all respects satisfactory. It is certain that under it there may be a failure to get track of many pieces of land, and that in many cases the exact area of such pieces as are listed will not be obtained. It is, however, the best that can be done. Its results will represent a fair approximation to accuracy and will thus constitute a basis to be revised as progress is made in conducting the work of a formal, accurate cadastral survey.

Administration Organization Required for Making the Assessment :—We have now outlined the problem, both theoretical and practical, of the introduction of a land tax. The next point requiring consideration is that of the organization that will be required to carry these plans into execution. This problem presents two phases: the organization of a central office that shall have general direction and supervision of the work, and the organization of a field force that shall perform the actual work of listing and valuing the lands.

Organization and Work of the Central Office :—At best great difficulty is going to be encountered in securing a proper corps of assessors and in ensuring that they perform their duties properly. This being so, it is of the utmost importance that, as far as possible, the field work be carefully planned, and detailed instructions to the assessors be formulated before any work in the field be begun. The object aimed at should be that of performing all work possible in the central office and of reducing the work of the assessors to that of carrying out instructions emanating from that office. A prime requisite of the work of assessment is that it shall be done in a uniform manner. Such uniformity can only be secured when all the assessors are working under instructions which leave the minimum of opportunity for the exercise of purely personal opinion.

To illustrate what is here meant let us take the matter of the description and valuation of lands. If the assessors were simply given the general instruction to describe and value lands, their returns would be of so varied a character that it would be impossible to harmonize them in the central office. To avoid this two things are necessary: (1) the preparation of forms, use of which must be obligatory in describing lands; and (2) the formulation and adoption by the central office of standards of value.

Use of Forms for the Description and Valuation of Lands :—The only effective way of ensuring that the returns made by the assessors shall be at once uniform and give the information required by the central office is that of requiring the returns to be made on prescribed forms. This means that the same information will be given about each piece of land and given in the same way. A separate form or sheet should be used for each piece of property. In Porto Rico it was found desirable to have different classes of land. There was then a form for the description and valuation of tobacco land, one for coffee land, one for sugar-cane land, etc. This was found desirable in order that certain details regarding each class that were peculiar to that class might be secured. The object aimed at in determining the character of these forms was not only that the central office should secure descriptions of the properties in a uniform way but that this description should be of a character that would enable the central office to carefully scrutinize each return for the purpose of assuring itself that the assessor had performed his work properly, and that the valuations arrived at were justified by the description of the properties to which they related. The theory in a word was that the assessor must in all cases justify his figures. We will have occasion in another place to emphasize the absolute necessity that provision be made for the exercise of the most rigid scrutiny and supervision on the part of the central office over the work of the assessors in the fields. The assessor must know that his work is being so passed upon.

Adoption of Standards of Value :—The placing of values upon land might seem to be one that could only be done by the persons actually inspecting the properties. In one sense this is true. In another, however, it is imperative that they should not be left entirely free in arriving at a decision. Unless some restraint is put upon them, their individual judgments will show wide variations and result in great inequalities in respect to the values fixed. This difficulty can be avoided by the central office fixing certain standards of value to be followed by the assessors. This means that before the work of assessing individual properties in a district is begun the central office should cause to be made a careful general inquiry regarding conditions and values in such a district. On the basis of the information thus obtained the effort should be made to classify the lands of the district according to their character and to assign to each class the range of values within which the value of any particular piece of land in that class should fall. Thus to illustrate, one class may be that of "pasture land" and provision may be made for 3 sub-classes, "No. 1," "No 2" and "No. 3" according as land of this class is of first, second or third grade as determined by its quality and location. For each of these three sub-classes a general standard range of values may be fixed, as from $100 to $200 per unit of measure for class No. 1, from $50 to $100 for class No. 2, and less than $50 for class No. 3, these figures being arrived at as the result of preliminary inquiry above referred to.

The mere statement above given will show the great advantages to be obtained from making this preliminary study of conditions and of fixing the standards that must be followed by assessors in doing their work. If it is carefully done, not only will the results be more uniform and far more satisfactory than would otherwise be the case, but the actual work of assessment will be enormously facilitated. To the assessors it will mean that they will know exactly what they are to do, and they can thus proceed with far greater speed and certainty than they could if they were left more largely to their own devices. To the tax payers it will mean that their interests are not being left to the whim or judgment of an individual who may not be fully qualified to perform the delicate duties with which he is entrusted. To the central office it will mean that it will have the means of passing judgment upon the work of its agents in the field.

A further advantage of this system of forms and standards is that it will greatly lessen the protests that will be made against the action of the assessors and will give to the central office the means by which it can pass upon such protests as are made.

So important is this matter that the whole success of the undertaking may almost be said to depend upon the care and thoroughness with which this preliminary work is done. The writer had the experience of participating, as Assistant Director of the Census, in the taking of the great census of population, manufactures and farms of the United States in 1910. In this census a detailed description and valuation had to be secured of every farm in the United States, and use was made of over 70,000 enumerators, corresponding to assessors, in securing the data for transmission to the central office. The success of this great undertaking was absolutely dependent upon the extreme pains that were taken in carefully preparing for the work, in drafting the forms upon which the returns were to be made and the instructions setting forth the manner in which the forms were to be used, and in fixing definitely the standards to be observed in arriving at values. Several years and the expenditure of thousands of dollars were required in carrying through this preparatory work. The problem confronting China in carrying through an assessment of the land of the Republic is not dissimilar, from the administration standpoint at least, in both scope and character from this undertaking of the United States. Here, as there, success will as stated depend upon the care that is taken in planning the undertaking and in performing the necessary preliminary work before actual field operations are begun. Every dollar and hour spent on this work will mean a saving of many times the number of dollars and hours that will be required for the performance of the field work itself.

Organization of the Field Force of Assessors:—It is unnecessary for us to point out the extreme importance of securing competent men for this important work. It is due to the recognition of the difficulty that will be encountered in securing such men that so great emphasis has been placed on the desirability of carefully planning in advance for the work, of prescribing in all possible detail the duties of such a force and of fixing definitely the forms and standards that shall be employed by them. In view of the magnitude of the undertaking it will be essential that the country should be carefully divided into districts and each district be treated as an administration unit. It is suggested that a director or supervisor of assessments be placed in charge of each district and that upon him be placed the responsibility of selecting, in accordance with the regulations prescribed by the central office, the force of assessors and assistant assessors, and of thereafter exercising a direct supervision and control over the manner in which they perform their duties.

For the performance of the field work it is further suggested that each district be further sub-divided into assessment districts with a chief assessor in charge of each. Such chief assessor will be assisted by a certain number of assistant assessors who will work under his immediate direction. The idea is that the chief assessor and his assistants will be in constant daily contact with each other; that each day the assistant assessors will turn in the forms filled in by them, representing the assessment of individual properties, to the chief assessor. He will carefully scrutinize them, determine whether they have been properly made, and when in proper shape forward them to the director or supervisor of the main district. Each form should bear the signature of the Assistant Assessor doing the work and that of the Chief Assessor. A careful record should be kept of the work of each assistant assessor so that the superior authorities can keep an accurate check on the work of all employees in the field. It should be the duty of the chief assessor himself to make assessments when practicable and especially to attend to the assessment of the more important properties or those presenting unusual difficulties. Especially is it desirable that responsibility should be definitely located. The chief assessors should be held responsible for their own work and that of all their assistants, the directors or supervisors for all the work of the chief assessors in their districts.

It starting the work it may be desirable for the work of assessing in each district to be begun gradually; that is, a beginning may be made by appointing only a few chief assessors and their assistants and undertaking the work at once in but a few assessment districts. Then as the assistant assessors acquire experience they may be promoted to the position of chief assessors and placed in charge of new districts with assistant assessors under them. A great advantage resulting from this policy will be the incentive that will be given to assistant assessors to work energetically and properly through the knowledge that if they do so they can expect promotion to the more important posts of chief assessors. A further incentive might be furnished by providing for a grading of the chief assessors and the assistant assessors and from making promotion from one grade to another as proficiency in their work is displayed or as they continue in the service for certain lengths of time. Coupled with this as has been pointed out, should go the knowledge on their part that their work is being carefully scrutinized by their superiors, and that whether they do good or bad work will be known by such superiors and that they will be rewarded or penalized accordingly.

Adjudication of Disputes:—An essential feature of the scheme for the assessment of land must be the provision of means through which disputes arising between landowners and assessors regarding the description and valuation of their lands may be heard and adjudicated before the final fixing of assessments is had. This means three things:—first, that full information will be given to landowners regarding the description; that is, statement of area, and grade or class, and the valuation on their lands by the assessors; second, that the landowners will be given an opportunity, if they believe that any mistake has been made in stating the area of their holdings, or in grading the land, or in valuing it, to file a formal protest against such action and to support such protest with such statements or other documentary evidence as they may think proper; and, third, the constitution of some tribunal for the hearing and adjudication of such claims.

The necessity for action of this character rests upon a number of considerations. In the first place, it is of extreme importance, from the political standpoint, that this great body of citizens, the most influential in the Republic, shall feel that the government is making every effort to treat them fairly and equitably, and that the fullest possible protection is being accorded to their property rights. The great problem now confronting China is, on the one hand, the political education of her people, and, on the other, the securing of their loyal support of the government. To many persons the only direct relation that they have with the government is as taxpayers and the character of this relation will thus exercise a profound influence upon their attitude towards the government under which they are living.

In the second place the provision of a system for the receipt and adjudication of complaints constitutes by far the most effective check that the central office will have upon the work of the individual assessors. The knowledge by them that appeal can be made from their decision and that any improper action on their part will be brought to the attention of their superiors cannot but prove a powerful deterrent to misconduct and ensure the best effort on their part to make their action such as will be supported by their superiors.

In Porto Rico, where the population to be dealt with was very hostile to the change, and extremely suspicious of the motives and acts of the government, great care was taken to cover this point in a satisfactory manner. Following is the system that was there provided. For each property assessed the assessor had to fill in the appropriate form describing the property in detail, that is giving its area, the character of land as determined by the use to which it was adapted and to which it was actually put, the class or grade to which the land was assigned and the value per unit and in the aggregate. This form was made out in duplicate. The original was turned into the office as the official record of the assessment and the duplicate was delivered to the landowner if possible and if he could not be found to the occupier or other person in charge. The owner or occupier was then given full information regarding the manner in which it was proposed to treat his land for taxation purposes. This duplicate furthermore had printed upon it precise instructions regarding the right the owner had to file a protest against the action taken, if he desired to do so, the time within which such protest should be made, the person with whom the protest should be filed, etc. With this duplicate was also furnished an official form on which the protest was to be made. This was necessary in order to ensure that the protest if made should be of such a character and in such a form that it could easily be considered.

It might seem that a procedure such as this would invite the filing of protests and that the number of protests would be so great that it would be impossible for the government to pass upon them. This would have been true but for the fact that certain standards of classification and valuation were fixed in advance with the result that it was possible in the majority of cases to make taxpayers see that the treatment accorded their lands was in conformity with such standards and that consequently it was hopeless for them to expect that their protests would receive favorable consideration. It must be recognized, and the statement should be put upon the form, that it is a physical impossibility to give the properties their exact value, even supposing that properties have a fixed value, which is not often the case, and that consequently no change will be made except when it can be plainly shown that a very material error has been made. The assessors were instructed to use the utmost tact in treating with taxpayers to explain to them the difficulties inherent in the undertaking and to secure their acquiescence, if possible, in the decisions reached by the assessors. In Porto Rico these efforts met with a large measure of success. The taxpayers for the most part felt that an honest attempt was being made to treat them fairly and protests against the action of the assessors were relatively few.

For the hearing of such protests as were made there was organized a Board of three persons, of which the writer, as head of the department of finance, was *ex officio* the Chairman. The protests were arranged by districts. Each case was examined on its merits. The papers in each case consisted of the original assessment form as turned in by the assessor, the protests and supporting documents filed by the taxpayer, and often a reply made by the assessor where the statement made by the taxpayer had been referred to him for comment. As each district was taken up the chief assessor in charge of the district was kept in attendance upon the Board in order that he might give explanations as required. The other two members of the Board were persons specially selected for the position on account of their personal knowledge of land conditions and values in the Island.

A careful record was kept of the action taken upon each case. For this purpose use was made of a special form upon which the decision was entered. This form when filled in was attached to the other papers. The office then had on file a complete record of the action taken in respect to the assessment of each piece of land. In the great majority of cases this record consisted only of the assessment return describing and valuing the property. In other cases it included the papers bearing upon the protest against the assessment as first made and the decision arrived at which we have just described. This record was of incalculable value when in after years the matter of revision of assessment was taken up.

This general system, with certain modifications to meet special conditions would, in the opinion of the writer, be adaptable to conditions in China. One of the modifications that would be required would be that a Board of Revision would be required for each province and possibly for each major division of a province, instead of a single Board for the whole country.

The Revision of Assessments :—In the foregoing we have described the steps that have to be taken in the making of an assessment of land for the first time. It is evident that this problem of making an original assessment presents difficulties which are not present, or at least are present only in an attenuated form, in all subsequent assessment work. The great difficulties encountered in making a first assessment are :—the securing of a list of the properties to be valued; the establishment of standards of valuation, and the organization, instruction and supervision of a force of assessors from among persons having had no experience in this class of work. These difficulties once overcome are largely overcome for all time. Thereafter in all assessment work attention may be almost wholly concentrated upon the single problem of revaluing properties already listed.

Notwithstanding these facts it is important to note that with an original assessment of property once made, there will still remain much to be done. It is well to realize that even though the best efforts be put forward to make the original assessment as perfect as possible the results will not be thoroughly satisfactory. It is inevitable that pieces of land will escape assessment; others will be assessed twice; mistakes will be made in stating the areas and character of the land; and the valuations placed on the several pieces will in some cases be too high and in others too low. These defects are bound to occur on account of the inherent difficulties of the undertaking, the lack of maps, records and other data from which to work, the fact that the work has to be done by a force which has had no prior experience in such an undertaking and with no precedents to guide them; and the further fact that the work be performed with great expedition.

For these reasons and because certain changes in the way of new land being reclaimed, other lands being destroyed through floods, individual pieces of land being consolidated or subdivided, and values changing as public improvements are made, it will be necessary for the government, immediately upon the original assessment being completed, to undertake the work of its revision. This work of revision, as has been pointed out, will be a far simpler undertaking than that of the original assessment. In addition to the advantages that have already been pointed out, there are the additional advantages that this work will be done by persons who have gained experience in the work, and can be prosecuted more deliberately and carefully.

The principle upon which the government should proceed is that of making a careful selection of a comparatively few assessors from among those who performed their work on the original assessment most efficiently; and of assigning to this small and select corps of expert assessors the work of systematically examining into, and, when necessary, of revising, all the assessments as originally made. If necessary, this work can be spread over a considerable number of years. It is important to have it known that this work of revision of assessments will be undertaken. Such knowledge will constitute an incentive to the assessors engaged on the original assessment to perform their duties properly since they will know that the more proficient among them will be retained for subsequent employment upon revision work. It will tend to allay the fears of the landowners since it will make known to them that they will have a further opportunity to have considered any just grounds of complaint that they may have.

[*The Memorandum will be concluded in the next issue of the Review, when parts III and IV will be published—Ed.*]

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A WARNING TO CHINESE POLITICIANS

[BY AN AMERICAN]

The revolution of 1911 was an attempt upon the part of the Chinese people to secure representation in the Government for the protection and promotion of the interests of the people, and the question is often asked by intelligent foreigners, and Chinese as well, whether such representation has been gained as a result of this and the two successive revolutions.

Revolutions occurring in China cannot have the slightest degree of success unless supported by at least a fraction of the moneyed interests among the Chinese themselves, and after five years of so-called Republican Government it is questionable if the Chinese politician has as yet realized the reason why he has been supported, first in his successful overthrow of the Manchus, and later in the elimination of Yuan Shih-kai and his immediate following. To those Chinese who are not directly concerned in the stability of their Government it is apparent that little has been done for their immediate welfare. The Government at Peking in 1911 and 1912 was split owing to the constant wrangling among the professional politicians of the North and South in their never ceasing contention for power. The revolution of 1913 was a direct result of a political faction—having lost in its combat with the Northern political faction—resorting to armed force; but, failing to succeed against Yuan Shih-kai, its leaders were compelled to retire to various foreign countries to prepare for another revolution.

In 1915 the Chinese people were again called upon to support a revolution against Yuan Shih-kai because of his attempt to assume an Imperial Crown. Whether Yuan Shih-kai was right or wrong history alone can decide for us, and it is beyond this article to consider the merits of the case. Yuan Shih-kai died on June 6, 1916, and since then six months have gone by without anything having been done for the good of the people. Parliament, since its revival, has met daily, but the needs of the people have never been considered. In the sessions of the two Houses of Parliament we find permanently upon the agenda paper names of individuals who are to be impeached, and it seems to those most interested in Chinese politics that the personal phase of politics is far more exaggerated than that which should be the sole object of Parliament—the good of the people.

In the building up of a stable Government the one thing needed is the confidence of the people, and without this nothing can be had. It is patent to all that the masses in China to-day are absolutely without faith in the various Governmental Departments. This article is not written in any other sense than with the desire of calling to the attention of the Chinese politician that unless the politicians are willing to consider the feelings of the people, the people will of their own accord overthrow the present Government or will voluntarily allow agencies other than those of native origin to work in their behalf.

The main object of the Government should be to protect and promote the interests of the Chinese business man, without which China can never hope to succeed. In the Houses of Parliament to-day, business interests are in nowise represented, nor are they represented in the various Boards of the Government. The Chinese business man has for the past five years gradually drawn his capital out of various commercial enterprises and has sought to conserve his little saving by hoarding it in foreign banks or burying it in some hidden spot. In travelling over China to-day it is impossible for one to find a single Chinese business man who is willing to invest his money. The professional politician now constantly avers that the battle has been successfully fought for the people against a corrupt Government, and that to-day the Chinese are willing to risk their money because they feel the Government is now in a position to give them sufficient protection. It is needless to say that if this were really the case the Ministry of Finance would have but little trouble in securing by the method of internal bond issues sufficient money to carry on the Government without the necessity of contracting foreign loans. As it is, the Provinces cannot collect the amount of revenue derived from the same sources previous to the Yunnan rebellion simply because revenue producing resources are gradually decreasing in value owing to the inactivity of the business man.

It is high time that the Central authorities came to the realization that China is now fighting her last fight against foreign domination, and unless the interests of the people are considered there is no hope of there being a united China under Chinese control. The one thing that Chinese must have is a safe-guarding of their own interests, which is a protection of a permanent nature. The professional politician can afford to promote revolutions whereby financial gains are made that will support him in time of exile, but this privilege is not one which the average business man is allowed to enjoy. In looking over the names of the various heroes of the three revolutions, it is extremely difficult to find one that has not profited financially by the revolution with which he was connected. The money that has gone to the support of the various political leaders and their following has been paid from the pockets of the businessman, and he has begun to weary of the constant drain upon his decreasing income owing to the instability of the Government.

Foreign financial aid is undoubtedly necessary, but this aid should be given in such a way that it can be turned to the good of China and her millions. Foreign nations have, during the last five years, profited by the misfortunes of the Government, and vast concessions have been made in exchange for money that has been expended upon political agitation and revolution. This should cease, for the foreigner as well as the Chinese will suffer in the end. It would be far better for the foreigners to come into China and take charge of the administration of the Government than that the indebtedness of the Republic should be increased to such an extent that China should be forced into a state of inextricable bankruptcy and foreign Nations be unable to come to a definite understanding among themselves. The total indebtedness of the Chinese nation is approximately $960.000,000, and it can be safely said that the total sum expended for revolutions has been approximately three billions of dollars. The Central Government has squandered the money derived from foreign loans, but that, in fact, has been a mere pittance when compared with the millions squandered by the professional politicians throughout the country. To-day we have the Bank of China and the Bank of Communications with practically no assets, but with liabilities amounting to not less than $250,000,000. We have in China to-day approximately 6,000 miles of railroad under operation, and these lines have been drained to the very last cent for political purposes, and rolling stock cannot be bought because of this fact. There is not a single source of revenue that has not been mismanaged or the funds mis-appropriated by the politicians, and the Chinese people have been in every instance the sufferers.

A clean and intelligent administration of Chinese affairs must be had, or China will fail to exist much longer as an independent nation. The constant attacks made upon the individual and the Government by the crowd of "rice-eating" politicians to be found in Parliament is doing nothing more than undermining the very foundation of the country. If personal bickerings could be set aside and the sole aim of Parliament be the creation of a stable and efficient Government, China would succeed.

Spheres of influence in China are the direct result of China's own mismanagement of Government affairs, and these spheres of influence, held by various foreign powers, can only increase in proportion under the weakening of the Central Government. And foreign investors are now beginning to realize that the safe-guarding of their interests in China will mean a thorough reorganization of the Chinese Government along lines that will insure permanent peace. It is safe to say that China to-day is in a weaker position than she has ever been before. The foreign Banker has no confidence in the Government, as has been evidenced by an unwillingness to advance money. While many will contend that the European war prevents England and France from assisting China financially, yet those who understand the situation readily realize that a paltry twenty-five or thirty millions of gold dollars is nothing.

For the first time the United States has taken an active interest in Oriental affairs, and both the Democratic and Republican parties are waking up to the fact that China is a field for investment unparalleled in the world, and it is certain that a foreign policy, especially as regards Far Eastern affairs, will be developed by the Washington Government. However, owing to the large losses incurred by the American investor in Mexico the Chinese will find the American business man rather shy in investing his capital in China under the present Government. The United States will have to advocate a strong foreign policy, or otherwise American capital will not find its way into China. The Wilson administration withdrew from the Six Power Group on the ground that it was not the intention or the desire of the United States to interfere with the internal machinery of the Chinese Government. This is a most laudable reason for the withdrawal, and the Government, as well as the people of the United States, felt at the time that the Chinese, after the overthrow of the Manchu Government, would establish an efficient administration; but after five years it has been found that China is weaker than at the time she entered upon the formation of a Republican Government. The American business man realizes this situation, and will be influenced by reports coming from China when he considers the investment of his money here.

The European war and the consequent surplus of capital in the United States is causing a keener interest in Far Eastern affairs by the average American business man, and this interest can have but one object, namely, to assist China in the formation of a stable Government under which native as well as foreign finance can find permanent protection.

This article is written with the hope that the Chinese people will not overlook the fact that the American investor is as careful as the European, and that unless the Chinese Government will bring into its administration competent Chinese business men to administer the affairs of the nation, that the United States will have to resort to the same plan of action as advocated and put into effect by the Five Power Group at present in China.

To-day China is split into various political organizations, and the will of the people has been entirely ignored. The time has come when a reckoning must be made, and with the close of the European war, unless China has succeeded in giving some sort of stability to the administration in Peking, the foreign powers will undoubtedly unite in the control of China's financial administration, which will strike at the very root of all Government institutions. The whole matter now resolves itself into the simple question: *Do the Chinese wish to reform their own country or have it reformed for them by foreign powers?*

MARSHAL FENG KUO-CHANG AND CHINA'S FUTURE

Of late the voice of the pessimist has been loudly raised in China, especially among foreigners, and it is, therefore, cheering and reassuring to read that the Vice-President of the Chinese Republic has a robust confidence that the clouds will pass away and his country enjoy a sunny future. Marshal Feng Kuo-chang can properly speak as one having authority. Never an extremist, he kept his head during crises that confused the understanding and betrayed the judgment of less well-balanced men, and, as a result, the views that he takes on any particular question are accorded considerable weight both by foreigners and his own nationals.

In the interview with the Vice-President published elsewhere he does not attempt to deny that superficially the political situation in China is not reassuring. He urges, however, that it is inevitable that during a state of transition difficulties should present themselves, and certainly, if he had cared to, he could have quoted history to support the contention. Neither France nor America succeeded in instantaneously creating a harmoniously working Republican government and five years in the history of a country such as China is too brief a period for a satisfactory readjustment to be effected. Marshal Feng is on sound ground when he urges that the experience of old China must co-operate with the theory and enthusiasm of Young China to perfect the system of government. Progress cannot be made if the highest administrative positions are filled by men who may have the clearest idea of what they desire to accomplish, but not the remotest idea how to set the administrative machinery at work to achieve the result sought. The plan that General Feng suggests of placing men of experience in the highest positions and allowing Young China, under their direction, to carry out reforms is an excellent one. In some degree that system operates in Siam. The official head of each Ministry in that country is an experienced Siamese, but his chief executive officer and adviser is a foreigner. The foreigner, who is, of course, thoroughly well equipped theoretically, makes recommendations to the Minister and the latter weighs the recommendations in the light of his experience and his knowledge of the psychology of his fellow-countrymen. This experience and knowledge frequently enables the Minister to point out to his foreign adviser that, while a proposed reform might be theoretically desirable, there existed practical difficulties of which the theorist had no knowledge. In the case of China the young men who had gained theoretical knowledge abroad could place their suggestions before an experienced chief for consideration, and he would be able to point out those which were practicable. Were this done no time would be wasted in impracticable schemes whose failure would discredit others, by the adoption of which the country would greatly benefit. There are in the ranks of Young China many men who will in time render great service to their country, but this time will arrive the more speedily if Young China is willing to gain experience under the direction of those who already possess it. There is no suggestion on the part of Marshal Feng that a policy of reaction should be adopted. He advocates real and cordial co-operation between those who know theoretically what should be done and those who know what it is possible to do. An automobile will carry passengers to their destination infinitely more rapidly than a stage-coach, but a driver, who while understanding how to handle an automobile knew nothing of the road to be traversed, its dangers and difficulties, would be likely to land his passengers in disaster. Were he to have an old stage-coach driver who knew the road thoroughly sitting next to him ready to advise him when to slow down, to turn an awkward corner, and so on, progress would be speedy and safe. Marshal Feng's advice is sane and sound and it is sincerely to be hoped that it will be followed.

JAPAN TRIES TO PERSONALLY CONDUCT AMERICA TO CHINA

It has been reported in several Japanese journals, and in at least one of an official character, that the Japanese Government is about to attach to its embassy in Washington Japanese experts upon Chinese affairs for the enlightenment and assistance, if not actual instruction of American diplomats, executives, and financiers in their dealings with China. As the Japanese Government neither has, nor claims, a reputation for altruism, it is naturally to be assumed that this very unique move is planned to benefit Japan. America has not asked Japan for any information about China nor for any guidance in the direction of her China policy. Neither has China asked Japan for any free advertising in America, but Japan, noting that American interest in China is growing rapidly, with an alarming rapidity as many Japanese view it, seems to have decided to volunteer what is described as "reliable information" to the American Government and people.

However the American people may receive this unsolicited assistance in the management of their foreign relations, commercial and political, China, if she ever comes to hear of the matter at all, and if she received the news with anything more than indifference, will be vastly surprised and will be at an utter loss to understand why one of the ever-troublesome outside nations, which constantly worry and perplex her, should take sufficient interest in her affairs to send envoys to another of these ulterior lands to convey information and possibly influence political policies. Whatever one may think Japan's commercial and political motives are in preparing such a mission to Washington, as a mere matter of enterprise it contrasts so strikingly with anything which China has done in the immediate past or has even thought of doing, that one might expect the Chinese to take the lesson to heart and do a little advertising on their own account instead of leaving it to their neighbor, whom they fear and suspect with rather good reason, to present their political and commercial present and future to the heads of the nation upon whose moral support they depend for the maintenance of their national integrity. It would be a pleasing surprise however, to those interested in China if the Chinese were even concerned or slightly resentful of a Japanese effort to depict China and Chinese conditions to the Americans as the Japanese would have Americans view these things. China after several hundred years of intercourse with foreigners, which has been painful and humiliating to her during her last century, still insists upon regarding herself as a detached national entity to which foreign relations are the most negligable feature of national life, until she gets into really serious trouble and is forced to realize for a time that she does not stand alone, the center of a little Mongolian cosmos to which the other powers of the world are only detached fringes. In seasons of comparative peace and immunity from external annoyance she invariably reverts to this latter traditional conception of herself and in this state of mind she would no more think of taking advantage of an era of placidity to improve her foreign relations than of setting out on a campaign of world conquest.

The present war in Europe has greatly enriched Japan, and has given her what her publicists describe as the "opportunity of a thousand years" to expand politically and commercially, to develop new industries at home and to establish new and firm trading relations abroad. A fair proportion of the raw materials which Japan has used in building up her old and new industries during the past two years has come from China, yet China on her own account has done nothing towards enriching herself in these two years other than yield up passively such crude products as Japanese and other foreigners saw fit to come and take from her. Japan gurgles with joy, and rightly so, over the prosperity which the war has brought her, while in China the only evidence that there is a war in progress is the chorus of groans from merchants whose trade in long established lines has been affected by the shortage of shipping or the high freight rates. With an almost unlimited supply of minerals, and animal and vegetable products and a sufficient number of mills and industrial plants to form a basis for industrial growth, the Chinese Government could have stimulated its merchant class and its proletariat into an industrial expansion which would have left them at the end of the war with a manufacturing capacity, and with shipping to carry their products, to which they cannot hope to attain in several decades of ordinary commercial routine. But the Chinese government has been most conspicuous during these war years for its kaleidescopic changes and the political gymnastics of its too numerous leaders, while the merchant class has been wondering what the war was all about, why the things that used to be bought could not be bought, and the things that used to be sold could not be sold, and the proletariat has been paying a little more and thinking nothing in particular. As the result of two years of unprecedented commercial opportunity, China is a little poorer than ever and has lost a little more credit and political prestige, while Japan is getting out of debt, heaping up a gold reserve, building a commercial fleet which will do credit to any European nation, and establishing a real, substantial claim to her coveted political hegemony of East Asia.

This Japanese educational mission to Washington will be interpreted by the friends of Japan as a progressive move in the projected American-Japanese co-operation in the development of China. Those who are suspicious of Japan and doubt the honesty of her co-operation project, will see in it an attempt to force America to see all Far Eastern questions through a Japanese lens. There is undoubtedly a political faction in Japan which looks upon all American enterprise in China as a menace to Japanese interests on the continent of Asia, and which voices through its press vague warnings of impending trouble if American commercial interests and Japanese politico-commercial interests in China should happen to conflict. To this faction it is essential that American official opinions should be swayed by information about China with a Japanese interpretation and commentary attached. By the enemies of Japan and by those who are even slightly suspicious of her the Japanese committee of experts upon China, which is to be attached to the embassy in Washington, will be regarded as a Board of Explanations, which will sit upon each bit of news that comes out of the East, Nipponize it as far as possible, or deny it with all fervour, and pass it on with a verdict to those whose opinion and influence in Washington are likely to be of weight. It is reported in the *Jiji* that S. Yoshida, at present consul at Antung in Manchuria, will be one of the first appointees to this unique office abroad, and that several others, thoroughly familiar with China will follow him shortly.

Whether Japanese efforts in America have the effect of creating a pro-Japanese bias in the country or whether they simply succeed in centering suspicion upon their promoters, their thoroughness is worthy of thought and is a striking contrast to the massive inertia of China. To the activities of their individual propagandists and merchants who have been feverishly active of late, they add a system of press agency which is Teutonic in its efficiency, and to the press agency they now add an official bureau of information upon Chinese affairs which will confide to the ears of those in the high places the thoughts and sentiments about the Orient which the press agency conveys to the masses.

EXPLOITATION OF RUSSIAN RESOURCES BY JAPAN

The plaint of the Novoe Vremya published in the November issue of the FAR EASTERN REVIEW called attention to the foreign invasion of Russia and to the danger that the vast undeveloped resources of the country would pass into foreign hands and be lost to the Russian people after the war. The Japanese side of this exploitation was merely mentioned in passing by the Russian journal, but the following notes from Japanese sources, described as the "Observations of a Government Expert," shed considerable light on what the Japanese hope to accomplish in Russia and more especially in Siberia.

After detailing the conditions that permitted the Germans to secure such a strong hold on the import trade of Russia, the expert discusses the need of a Japanese-Russian joint bank, and asserts that if Japan and Russia, co-operating, have not enough money for proper economical development they can borrow it from a third power, presumably the United States, although that country is not mentioned by name.

In 1903, the Japanese Honorary Consul at St. Petersberg obtained the Czar's permission to establish a Russo-Japanese Bank at the Russian capital. The scheme came to naught owing to the subsequent war between the two countries. The conditions then were such as to offer little inducement for the establishment of a bank, but now such a bank is declared to be an absolute necessity owing to the extraordinary length of credit obtaining in Russia, a factor so successfully utilized by German merchants, which is an obstacle which cannot be overcome by Japanese traders except with the assistance of a powerful bank. The British merchants are backed by the Anglo-Russian Bank, and merchants of other nationalities in Russia are likewise supported by financial organizations of their own.

A Russo-Japanese Exhibition in Western Russia is of urgent necessity for disseminating ideas of Japanese products among the possible Russian consumers. Towards the end of 1913 there was talk at Petrograd of opening such an exhibition immediately after the close of the war, and last year the public of Kief took up the proposition and approached the Russo-Japanese Association for its support.

The observer asserts that joint undertakings by the peoples of the two countries are the ground work on which to construct the economic rapprochement between them, and are conducive to their permanent friendly intercourse in a political sense. Objects for such undertakings are to be found in large numbers in Russia, and in China, especially Manchuria and Mongolia, but are by no means lacking in Japan. The tea trade, for instance, can be carried on under the joint management of the Russian and Japanese traders.

Russia, rich in natural resources and Japan, says the observer, with capital and technical skill to spare, must needs be able to co-operate to their mutual advantage. If more capital is required than they have at their command, they can draw it from a third country.

The first enterprise that suggests itself to the expert for their joint management is the fishing industry along the coasts of Kamchatka and Saghalien. This industry has formed a perennial subject of disagreeable negotiations between the authorities of the two countries, and although their cordial relations are never likely to be disturbed through any differences on the same subject, occasional publication of disturbing news by the unscrupulous papers of both countries lends a peculiarly delicate colour to the whole affair. It is to be desired in the interest of the "higher politics" of both countries that this source of conflict, even at the southern extremity of Kamchatka, should be eliminated.

The Japanese are advised to use moderation from first to last in settling each and every difference, for the Russians after all have it in their power to refuse to renew the existing treaty on its expiration. The products of the Russian littoral will yield a greater profit if exported to Europe, China and India in a finished state, than in a half-finished state as they are now.

Mining and pasturage in Manchuria and Mongolia are no less attractive undertakings for joint enterprise of the two peoples. The construction of a trans-China Railway to connect the Korean or the South Manchuria Railway with the Russian Central Asiatic Railway or the South Siberian Railway now building, will sooner or later become a practical question, and forms one of the numerous works addressing themselves to the co-operative enterprise of the Russians and Japanese.

The rich natural resources of Russia hitherto comparatively unexploited afford most promising fields for Japanese enterprise, and the following are mentioned by the expert as in the order of their importance: (1) mining, (2) manufactures, (3) electric works, (4) brokerage, and (5) retail trade. Russia, in order to replenish her exhausted capital and to revive the value of her currency, will naturally strive to increase the production of her mines, some of which are the richest in the world in platinum, gold, silver and copper, but whose operation hitherto has been relegated to foreign capitalists. Japanese capitalists, the expert has no doubt, will be accorded the same rights and privileges as other foreign investors by the Russian Government, which will welcome developers of Russian riches from the land of its political ally. There are any number of other enterprises fit for Japanese exploitation in Russia which would be as profitable to the exploiter as they are essential to the best interests of Russia.

Electric lighting and traction in the many towns of Siberia, have long attracted the attention of foreign capitalists and must appeal with special interest to Japanese business men. The Russian trader is content with exhibiting his wares at his store, and rarely ventures abroad to seek his customer, which is the reason why the business of commission broker is so paying in Russia. The Germans thoroughly understood and utilized this secret. They did most of the selling of Russian goods abroad for the Russians and imported foreign goods for them.

Foreigners of smaller means, especially Chinese, have created lucrative businesses by acting as middlemen among Russians. The Japanese retailers in the littoral provinces of Russia are following the example of their Chinese confreres, though their profits are infinitesimal. If they had sufficient means, or if they could so combine their capitals as to lay in stocks from European Russia in decent quantities for distribution among themselves, they would do better, but their insular spirit and mutual jealousy have so far deterred them from doing what their Chinese competitors have been doing for so many years with perfect satisfaction to themselves.

The Japanese tradesmen are mostly content with satisfying the wants of Japanese residents for rice, soy, *miso*, and the like, or, says the expert "to use a vulgar slang," with squeezing their own nationals. "Of course," the expert observes, "it is better that the squeezing should be done by Japanese than by Chinese, who would have easily filled the place of Japanese but for their presence."

It is deemed most important that Japanese business houses should be represented in Russia by really capable men whose character is above reproach. This action is calculated to have a far reaching effect upon the trade relations between the two countries. It is recommended that they should form a society having a man of character as their representative, to act as intermediary between the Japanese and Russian authorities and come into social and business contact with the representatives of Russian officialdom and industry.

It is also asserted that Japanese Consulates must be established first at Odessa and Irkutsk and later at Riga and Kief. According to statistics for 1913, Germany led the list of foreign Consulates in Russia with 51, followed by Britain with 50, Sweden with 44, and by Turkey in the fifteenth place with 20, while Japan had only four, of which two were in Siberia and only one other had an honorary Consul as its official. Commercial attaches are indispensable adjuncts of Consulates, says the expert, and the importance of their manifold duties cannot be underrated.

CHINA'S SALT REVENUE

We publish herewith a comparative statement of the revenue collected by the Chinese Salt Administration and deposited in and withdrawn from the foreign banks interested in the Reorganization Loan (and known as the Group Banks), during the years 1913, 1914, and 1915. From this statement it is more than apparent that the reformed administration introduced since the signing of the loan agreement, whereby the tax is collected upon salt at the time of issue, has resulted in a considerable increase in the revenue collected and accounted for. The increase in the figures between 1913 and 1914 gives a very clear indication of the gradual reform introduced. Out of the total revenue collected the Chinese Government have been able to meet all the obligations in connection with which salt revenue has been pledged in any way, and at the same time they received during the year 1914 a clear surplus of $31,304,818.22, and during 1915 a sum of $27,523,066.47, money which they were free to use without any interference or control by the foreign banks. At the end of 1915 there was also a balance of $24,385,191.22, which would have enabled the Chinese Government to have had at least another $10,000,000 for their requirements if it had been necessary. There should now be no question in the minds of the Chinese of the absolute necessity of having a proper system of accounting of their revenues which will enable them to tell exactly what revenue they are receiving and how it is being disposed of. It may be added here that the total revenue which has been handed over to the Chinese Government up to November 30, 1916,—which is not shown in the table herewith—amounted approximately to $60,300,000 to which has to be added the balance of $24,385,191.22 of 1915 revenue still on deposit with the Group Banks on January, 1916. From the total sums available from salt revenue, all the obligations secured under Salt Revenue were met in full, and the sum of $10,071,000 was paid towards meeting the Boxer Indemnity payments for 1916. The total sums handed over to the Chinese Government amounted to the large total of $50,230,258 which makes an average of nearly $4,150,000 per month available for the use of the Central Government.

These results are highly satisfactory when it is remembered that the greater part of the Salt Administration is still being run practically with Chinese assistants, with a very thin red line of foreign supervision. If the Government would only realise it they could, by having an enlarged and efficient foreign service, inoculate into the Chinese staff that spirit of discipline that seems to be lacking in all Chinese organizations that have no foreign control. With an increase in foreign assistance too, for the purposes of prevention of illicit traffic in salt, it would seem possible still further, and immediately, to increase the revenue. It is well known that the quantity of salt taxed according to the published accounts of 1914 (recently issued) is not favourable when compared with the great consuming population of China, which in itself indicates that illicit trade is being carried on to a larger extent perhaps than is believed. Until efficient means for prevention of smuggling and a well organized enlarged service can be established a considerable increase in revenue can only be the result of several years of exertion against odds on the part of the small foreign staff at present employed. In this connexion reference must be made to the state of affairs in Manchuria where active and open smuggling of salt in large quantities is being carried on by Japanese. A Mukden correspondent to the *Peking Daily News* describes how Japanese are now smuggling salt into the very interior by the car load. From the last week in November to the middle of December, he says over 100 train car loads were sent to Penchi station, and the principal salt smuggling stations in South Manchuria, for sale. "On December 10," he writes, specifying an incident, "31 big carloads of salt, covered by hay and other stuffs, and escorted by Japanese smugglers, were sent into the interior districts for sale. They were discovered by Chinese salt police who drove all these cars to their office, but in a few hours the smugglers returned with more than a dozen Japanese policemen, creating trouble in the Preventive Office and smashing everything there." This seems to be a common sort of thing in certain parts of Manchuria, while throughout China proper smuggling is also carried on extensively, a state of affairs that can only be remedied by the organization of an effective preventive service under strictly foreign supervision.

The total quantity of salt taxed during 1913 amounted to 13,581,198 piculs, Ssu Ma scale, and the total revenue receivable amounted to $16,649,625.34. For the year 1914 the total quantity of salt taxed amounted to 28,926,603 piculs, Ssu Ma scale, and the total revenue receivable amounted to $50,459,793.86. The expenses for 1913 came to $3,532,316.52, while during the year 1914 they amounted to $6,773,226.94 against a total deposit with the Group Banks of $11,480,026.83 during the period for the year 1913 and $60,409,675.75 during 1914, which deposits include payments made by the Transportation Offices to the Group Banks, amounting to $3,074,349.37 during 1913 and $15,961,532.80 during 1914.

A phase of the 1914 accounts which seems to show better results than 1913 is the working of the transportation offices, but it cannot be said that they illustrate success from a purely business point of view. The actual receipts in proportion to the quantities of salt handled show a poor result in comparison with the direct system of taxation which exists under the system of District Inspectorates, the transportation offices being conducted, of course, by the Chinese on Chinese lines. While the total revenue received by them amounted to but $15,961,532.80, the District Inspectorate offices collected the huge figure of $50,908,402.77. The sum owing to the Government by the transportation offices ($17,281,000) seems unduly large and more than justifiable if efficiency were shown in the system of collection. The accounts of one of the transportation offices shows an enormous loss on the conversion of notes into silver for remittance to the Group Banks, amounting to the huge sum of $2,450,382 out of a total sum collected amounting to $7,856,757.79. This would appear to indicate that the acceptance of depreciated provincial currency notes was not a financial success and practically was a method of merely giving a rebate on the fixed taxes. On the other hand the transference of the total silver collected during the year 1915 was, in the circumstances, highly satisfactory. The loss under "transfer charges and by exchange" was only $272,000 on a total sum moved about the country of some $70,000,000. Incidentally, as all the accounts of the Salt Administration are kept in dollars, this is a scathing commentary upon the argument of the bankers that the Tael is necessary for the purpose of conducting financial operations in China! The Salt Administration, which handles money from all over the country, finds that they never require to consider the Tael until they come to deal with the foreign bankers. This is an experience that is worthy of note by all who would have a change made in the local currency.

Since the above was written we have been able to obtain the following figures for the year 1916:

Balance with Group Banks on 1st January, 1916	$24,385,000.00
Revenue paid into Group Banks during the year 1916	71,530,000.00
Interest, etc., received during the year 1916	423,400.00
	$96,338,400.00
Contributions towards payment of Boxer Indemnity	$10,071,400.00
Interest paid on loans secured against Salt Revenue	14,928,800.00
Refunds to Central Government during 1916	52,226,300.00
Sundry Payments, losses in exchange, etc.	369,900.00
Balance with Group Banks on 31st December, 1916	18,742,000.00
	$96,338,400.00

The following table is from the 1914 report:

Statement of Receipts and Disbursements of Salt Revenue.

For the year ended 31st December, 1914.

RECEIPTS

1.—Balance at 1st January, 1914:—		
Cash in various Offices	544,918.23	
Cash in Bank of China	756,745.09	
Transfers in transit to Group Banks	1,137,070.29	
Cash in Group Banks..	11,002,219.78	
		13,440,953.39
2.—Revenue Collections per District Inspectorates..		50,908,402.77
3.—Remittances from Government Transportation Offices		15,961,532.80
4.—District Inspectorate Suspense (Advances on account of Duty, etc.)		1,045,888.24
5.—Interest Credited by Group Banks		231,825.03
Total Dollars		81,588,602.23

DISBURSEMENTS

A.—Administration Expenses Defrayed		5,148,039.46
B.—Transfer Charges and Loss by Exchange * ..		3,024,745.67
C.—Special Government Withdrawals		73,793.53
D.—Charges and Obligations Secured on Salt Revenue..		21,106,572.99
E.—Releases to Government		31,304,818.22
F.—Miscellaneous Withdrawals		10,228.80
G.—Balance at 31st December, 1914:—		
Cash in various Offices	2,720,875.08	
Cash in Bank of China	834,717.29	
Transfer in transit to Group Banks	186,600.48	
Cash in Group Banks	17,178,210.71	
		20,920,403.56
Total Dollars		81,588,602.23

* Mainly due to acceptance of depreciated Canton Notes.

Comparative Statement of Salt Revenue deposited in and withdrawn from the Group Banks during the years 1913, 1914 and 1915

DEPOSITS	THE YEAR 1913	THE YEAR 1914	THE YEAR 1915
Balance at Commencement of the Year...		11,480,026.83	17,328,485.81
Interest Credited by Group Banks	8,784.07	231,825.03	197,052.89
Proceeds of Salt Revenue Received by Group Banks.........	11,471,242.75	60,409,675.75	69,277,536.42
Total Dollars......	11,480,026.83	72,121,527.61	86,803,075.12

WITHDRAWALS	Charges and Obligations Secured on Salt Revenue:— 1913	1914	1915	THE YEAR 1913	THE YEAR 1914	THE YEAR 1915
Anglo-German Loan of 1898.................	Nil	2,700,024.61				
Boxer Indemnity of 1901		13,505,833.75	23,787,463.37			
Chihli Provincial Bonds of 1910......		725,973.90	731,128.00			
Chinese Government 5% Gold (Crisp) Loan of 1912.........		4,075,179.58	2,998,885.11			
Chinese Government 5% Reorganization Gold Loan of 1913		......	6,932,262.68			
Hupeh Provincial Bonds of 1909......		99,561.15	149,343.22			
		21,106,572.99	34,599,082.38		21,106,572.99	34,599,082.38
Miscellaneous Withdrawals					10,228.80	22,991.00
Releases to Government					31,304,818.22	27,523,066.47
Transfer Charges and Loss by Exchange					2,371,421.79	272,744.05
Balance at End of the Year...............				11,480,026.83	17,328,485.81	24,385,191.22
Total Dollars				11,480,026.83	72,121,527.61	86,803,075.12

KOWLOON-CANTON RAILWAY (BRITISH SECTION)

[ANNUAL REPORT FOR 1915]

The building of the new Terminal Station at Kowloon has made satisfactory progress during the year, the Building itself being practically finished; though owing to the war unforeseen delays in the arrival from England of fittings and fixtures have held up the completion of the interior, it is yet hoped that it may be possible to open the Building for the Public early in the coming year.

A thoroughly up-to-date mechanical interlocking signal system has been installed at the Kowloon Terminus by the Railway Signal Company, Limited, all signals and points within station limits being now operated from a cabin situated at a point overlooking the yard and approaches. The cabin contains 80 levers, 18 of which control 27 points, and 55 are for working 53 fixed signals, ground discs and the gates at Holt's Wharf level crossing, the remaining 7 levers being spare. The new installation was brought into use on November 25th without any interference with traffic. In view of the large number of pedestrians using the above mentioned crossing, it was found necessary to provide an overhead way, and a steel footbridge, originally ordered for a wayside station but afterwards not required, has since been erected here and opened for use of the Public.

Before the Station as a whole can be considered complete, the platforms require to be partly roofed over and the circulating area in front of the west face surfaced, curbed and and metalled. Designs were prepared during the year for the platform roofing and a contract entered into by the Crown Agents for the supply of the necessary materials. In March an order was placed through the Crown Agents for one Avery duplex printing and weighing machine and in July for a Pooley weighbridge.

The repairs to the embankment pitching on the coast line between miles 7½ and 14 mentioned in the last Report have now been completed in a substantial manner and no more trouble may be expected at these points from storms or typhoons.

Quarters for the European staff were commenced in March, one row of three two-storied houses facing south, and one row of five facing east. The former were occupied in September, and the latter in October. The permanent way materials required for the extension to the locomotive yard not arriving till late in the year, very little work could be done on this project. The conversion of the paint shop into a locomotive shed was however commenced and brickwork carried up to roof level in readiness for the steelwork ordered from home, but as this did not arrive a temporary palm leaf roof was erected to enable the building to be used. The erection of the new running shed has been delayed as difficulties were experienced on account of the war in obtaining satisfactory tenders for the steelwork, and further, because possession of the necessary land could not be obtained until recently. New designs for this shed are in course of preparation and probably timber roof trusses on reinforced concrete columns will be adopted. The platform at Sheung Shui station was increased by a width of fifteen feet and the station accommodation doubled. Very extensive repairs were also carried out to the manager's house which has now been put in a state of thorough repair, the cost of the above being charged to working expenses.

The three new Main Line locomotives ordered from England in 1914 arrived in the Colony in May and were erected and have rendered satisfactory service. These engines are fitted with Wakefield's mechanical lubricators to the valves and cylinders and also with tail end rods to the pistons, which is an improvement on those previously purchased. Locomotives Nos. 1, 2, 3 and 4 have all been thoroughly overhauled during the year but no painting could be carried out as the paint shop had to be used as a running shed; this however will be done as soon as the paint shop is completed. During March eight new coaches were completed and put into service, and underframes for four additional coaches were received from home on which two third class coaches have been erected; the remaining two, a first and second class composite and a restaurant car, are well in hand.

On August 7th and 8th an aviation meeting took place at Lok Lo Ha by a Chinese aviator. A most efficient service of special trains was instituted but unfortunately the meeting did not attract the Chinese public to the extent anticipated, largely due to the rather high charge for admission made by the aviator to third class passengers. In August a live fish traffic commenced between Shek Lung and Canton, and in order to deal with this two 30-ton wagons were fitted with special tanks.

All tracks have been maintained to a good standard though in a few places the sleepers are still being attacked by white ants despite constant attention. The Expenditure chargeable to Construction Account to December 31st, 1914, was $14,095,660.69, and during the year further expenditure was incurred on works detailed in this report amounting to $638,995.11, which after deducting a sum of $22,829.97, being receipts on account of sales of plant, etc., leaves a total of $616,165.14 for the year.

The Revenue Statements of Earnings and Expenditure take the usual form. The receipts on account of local coaching traffic amounted to $114,360.34. an increase of $5,961.76 as compared with 1914, while the local goods and sundry traffic show decreases of $2,069.6[illegible] and $6,178.67 respectively. The Revenue from through and joint sectional coaching traffic was $21,304.16 less than the previous year mainly due to a fall in the number of through and joint sectional passengers carried as compared with 1914, which was an abnormal year owing to the depreciated Chinese Government notes being for some time accepted at face value by the Railway (Chinese Section). The Working Expenses amount to $297,265.97 or $22,899.58 more than the previous year. The excess is due to the inclusion of expenditure incurred in repairs to manager's house, improvements at Sheung Shui station, and to a payment of rent to the Chinese Section, amounting to $10,478.81, for the station accommodation at Shum Chun from October, 1911 to June 30th, 1915. The Gross Earnings for the year were $343,769.08 as against $364,608.32 for 1914. The balance after paying working expenses stands at $46,503.11.

During my absence on short leave from August 28th to 7th October, 1915, Mr. Robert Baker (Engineer of Way and Works) acted as Manager. The repairs to embankments and erection of the various new buildings necessitated additional engineering staff and in November, 1914, the services of Mr. A. S. MacKichan were obtained. Mr. W. G. Clark, Traffic Assistant, was granted 8 months leave and returned to duty on December 22nd. Mr. W. S. Cuff, Guard, left with the Hongkong Police Contingent on 19th November to join His Majesty's Forces.

H. P. WINSLOW,
Manager.

Revenue Account for the Year ending 31st December, 1915

1914	Per cent. on Gross Receipts	Expenditure	Amount 1915	Per cent. on Gross Receipts	1914	Earnings	Amount 1915	Total
$ c.	%	*Main Line*	$ c.	%	$ c.	*Local*	$ c.	$ c.
42,857.71	11.75	To Maintenance of Way and Works	53,665.32	15.61	108,398.58	By Coaching Traffic	114,360.34	
129,861.27	35.61	,, Loco. Carriage & Wagon Expenses	130,184.01	37.87	10,121.25	,, Goods Traffic	8,051.57	
46,234.00	12.68	,, Traffic Expenses	47,840.08	16.82	12,861.59	,, Sundry Traffic	6,682.92	
40,422.17	11.09	,, General Charges	45,006.00	13.09				129,094.83
...	...	,, Special & Miscellaneous Expenditure	52.00	.02	131,381.42			
						Foreign		
		Branch Line			215,045.63	By Coaching Traffic	193,741.47	
6,369.43	1.75	To Maintenance of Way and Works	2,828.42	.82	10,690.98	,, Goods Traffic	13,665.73	
7,394.28	2.03	,, Loco, Carriage & Wagon Expenses	6,380.14	1.86	...	,, Sundry Traffic	215.00	
1,227.53	.34	,, Traffic Expenses	1,310.00	.38				207,622.20
...	...	,, General Charges	...	...	225,736.61			
...	...	,, Special & Miscellaneous Expenditure	...	...		*Branch Line*		
274,366.39	75.25		297,265.97	86.47	7,018.14	By Coaching Traffic	6,593.09	
90,241.93	24.75	,, Balance (Net Earnings)	46,503.11	13.53	472.15	,, Goods Traffic	458.96	
					...	,, Sundry Traffic	...	
364,608.32	100.00		$343,769.08	100.00				7,052.05
					7,490.29			
					$364,608.32			$343,769.08

J. MORRIS,
Chief Accountant.

H. P. WINSLOW,
Manager.

Kowloon, April 14th, 1916.

FEDERATED MALAY STATES MINING, 1915

The official report of the mining industry of the Federated Malay States for last year does not reveal any feature of note. The output continued to fall, and this decline has now been continuous for the past three years, as the following table shows:—

	1913. *Pikuls.	1914. Pikuls.	1915 Pikuls.
Perak	493,753	479,621	467,346
Selangor ...	252,765	244,665	222,298
Negri Sembilan	36,821	35,900	29,049
Pahang	58,791	63,723	66,977
Total	842,130	823,909	785,760

These figures correspond to the following tonnages: 1913, 50,127; 1914, 49,042; 1915, 46,766. Coincidently with this decline in output there is a corresponding falling off in the labour force employed, which totalled 225,404 in 1913, 171,689 in 1914, and 164,457 last year. The mechanical power has increased, to some extent offsetting the decline in manual labour; but there can be no doubt that the decline in output is closely connected with the diminution of the labour force employed, as has always been the case in this field, where so large a proportion of the work done is hand labour. It is interesting to notice that the proportion of output from purely Chinese mines continues to show a decline. Last year it is estimated that the proportion was 72 per cent. of the total output, compared with 76 per cent. in 1914 and a considerably higher proportion in earlier years. No doubt a gradual change is taking place in the conditions of the industry. We have constantly looked forward to the time when the alluvial deposits must begin to show definite signs of exhaustion, and though the industry has shown marvellous power of adaptability, the experience of the last fifteen years forbids us to hope that the conclusion of the Ipoh Conference as to reserves of ground was a mistaken one. The great feature of the last two or three years has been the success of bucket dredging, and the declining proportion shown in the yield from purely Chinese concerns is an indication of how the introduction of suitable machinery may enable the field to develop by treating previously worked ground profitably. The average price obtained for tin locally was $78.17 a pikul or £153 4s. 3d. a ton, as compared with $73.44 a pikul, equal to £143 18s. 10d. per ton in 1914. The decline in output of 2,276 tons again testifies to the fact that around £150 per ton is a critical price for the industry. It is noticeable that the State which has chiefly suffered in respect of its native force is Selangor, where the exhaustion of the tin deposits is more advanced than elsewhere. This year we have to note a further continuance of the decline, in spite of the improved prices which have been ruling. There was a considerable increase in the horse-power employed in the mines, though probably not so great as would have been the case in peace time. The total shown was 56,197 h.p., compared with 41,623 h.p. in the preceding year. The chief increase was shown in hydraulic, owing to the entry of the Gopeng Consolidated plant into commission, and the re-working of a steam driven electric plant in Perak was the chief cause of the improved showing for steam driven plants.

As regards dredging, seven companies were in operation, accounting in all for 38,585 pikuls. The Malayan Tin Dredging Company, with four dredges, produced 11,966 pikuls from 2,412,860 cubic yards; the Tronoh Mines, with one dredge, obtained 4,338 pikuls from 790,869 cubic yards; the Kamunting returned 8,966 pikuls from 929,000 cubic yards: and the Kampong Kamunting dredge 4,768 pikuls from 640,000 cubic yards. This latter company expects to start a second dredge in the current year. The Ipoh Tin, on a four months' run, obtained 1,760 pikuls from 300,000 cubic yards, while the Chenderiang obtained 4,248 pikuls from 754,000 cubic yards on a nine months' run. Finally, the Tekka Taiping, which ran a little over two months, obtained 1,498 pikuls from 201,500 cubic yards. These figures indicate what the grade of the re-treated ground is, and how it compares with tin dredging propositions in other parts of the world. The amount of tin handled by the European smelters was somewhat less than in 1914—even so, it amounted to considerably over 90 per cent. of the whole, a marked change from earlier years in the direction of increased European influence in the field.

Glancing at the output of individual mines, the following table gives the producers in excess of 5,000 pikuls. The ground treated is also given, to afford some data as to current values. In most cases the figures given in the report include much dead work, and in consequence the yardage is only included when it is stated to be payable wash:—

Mine.	Output. Pikuls.	Ground Worked. Cu. yards.	Labour.
*Pahang Consolidated	46,461	1,596,000 tons	3,974
Tronoh	26,913	1,096,334 ,,	2,592
French Tekka ...	18,750	1,277,500 ,,	936
Gopeng Consolidated	13,310	—	783
Man Fatt Kongsi ...	11,532	228,200	1,688
Chan Thye Lee's Mines	10,746	237,610	1.480
*Rahman Tin Co. ...	10,404	83,437	692
Sungei Besi	10,304	274,000	471
*Titi	7,544	—	975
Tan Chia's Mine (Batang Kali) ...	6,888	360,240	1,200
Eu Tong Sen's Mine (Kampar) ...	6,858	285,325	490
Tekka	6,603	—	454
Tong Hong Kongsi	6,502	222,803	775
Chung Thye Thin's Mine (Tronoh) ..	6,379	147,245	—
Rahman Hydraulic	6,026	192,000	555
ThongHeng Kongsi	5,501	349,910	850
Tronoh South ...	5,366	123,000	560
Kinta Tin	5,353	—	520
Kramat Pulai ...	5,012	620,000	145

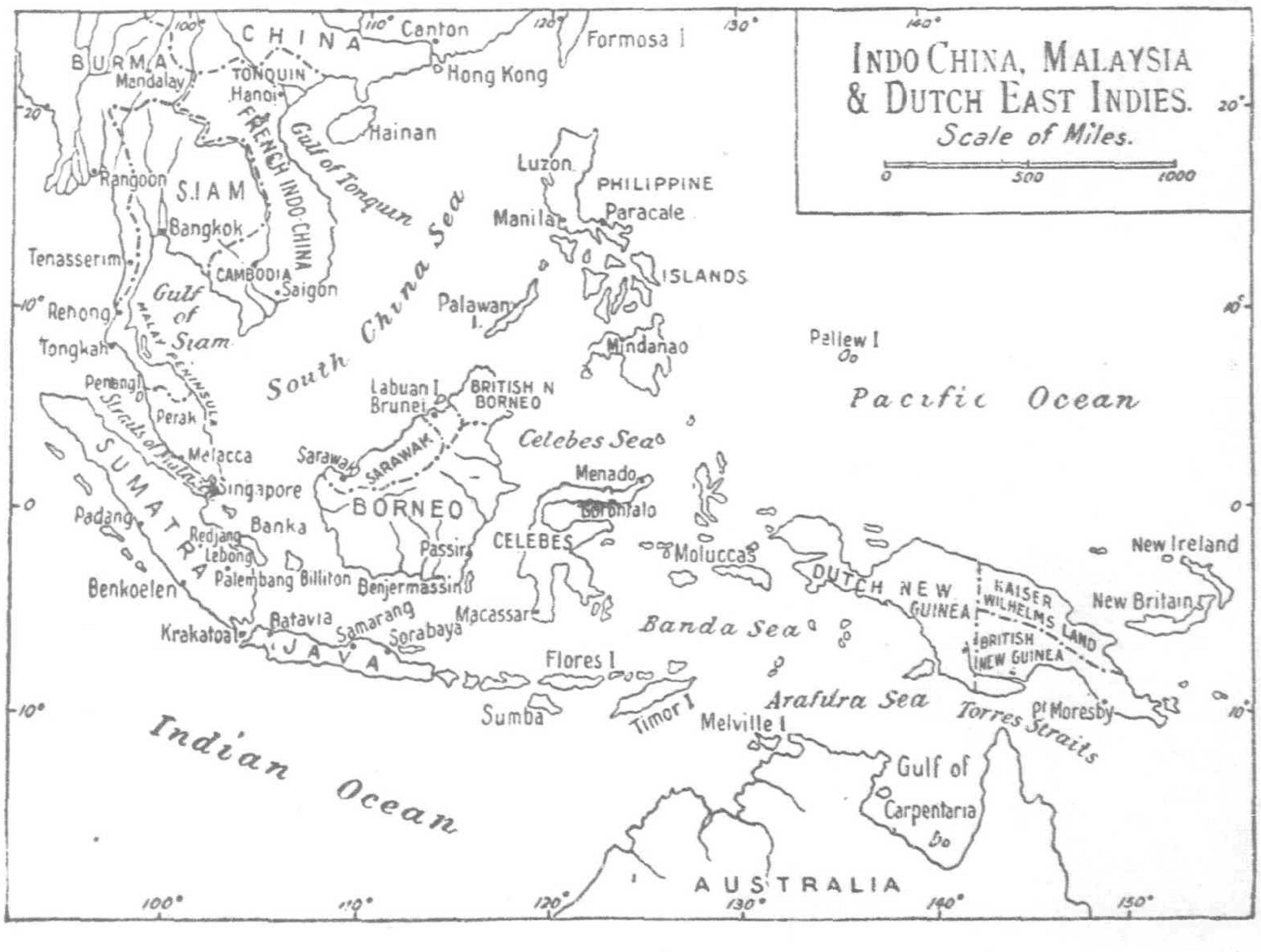
*Lode mine.

In lode mining there is little fresh to record. The Pahang Consolidated had a good year and are feeling the benefit of their additional plant, which included an air compressor and electrically driven pumps, Babcock & Wilcox's boilers, James' concentrating tables, and a Dorr Thickener. Among other lode mines the Ulu Bakau turned out 3,602 pikuls. The Menglembu was worked on a smaller scale for an output of 3,124 pikuls. The Sungei Gau treated 4,734 tons of stone, with a total recovery of 2,898 pikuls. Bibby's mine at Chin Chong, also in Pahang, obtained altogether 1,766 pikuls from 6,151 tons, but the grade fell off. As regards lode working in the hill country, increased experience of the irregularity of and variable value of the ground tends to show that the richness of some of the alluvial ground on the lower levels was due to natural concentration extending over long periods of time more than the derivation from a rich source.

The wolfram output shows little change from recent years, the total being 3,940 pikuls last year, as against 3,897 pikuls in 1914 and 3,471 pikuls in 1913. The output of scheelite was higher at 961 pikuls, giving a total of 4,901 pikuls of tungsten ores, or 291 tons in all. These ores do not occur in defined deposits, but are found generally in small quantities irregularly mixed with the tin ore and gangue; the ore, too, is mainly low grade.

A recovery was shown last year in the gold output, the amount returned being 18,641 fine ozs. valued at £72,234, compared with 14,272 fine ozs. in the previous year. This increase was mainly due to the larger return from the Raub, where 16,103 ozs. were recovered from 172,295 tons of stone. The balance was small contributions from Perak and Negri Sembilam, probably alluvial.

Progress with the Rawang Colliery has been much delayed by the war. Two incline shafts have been sunk about 800 ft., and the production was commenced in September, 11,523 tons being raised to the end of the year. At present there is no suction gas plant suitable for the local coal. Experiments are also being made with a view to ordering a briquetting plant, but so far two mines have adopted the use of the coal. The area of land under mining lease was 275,399 acres, about the same as the previous year.



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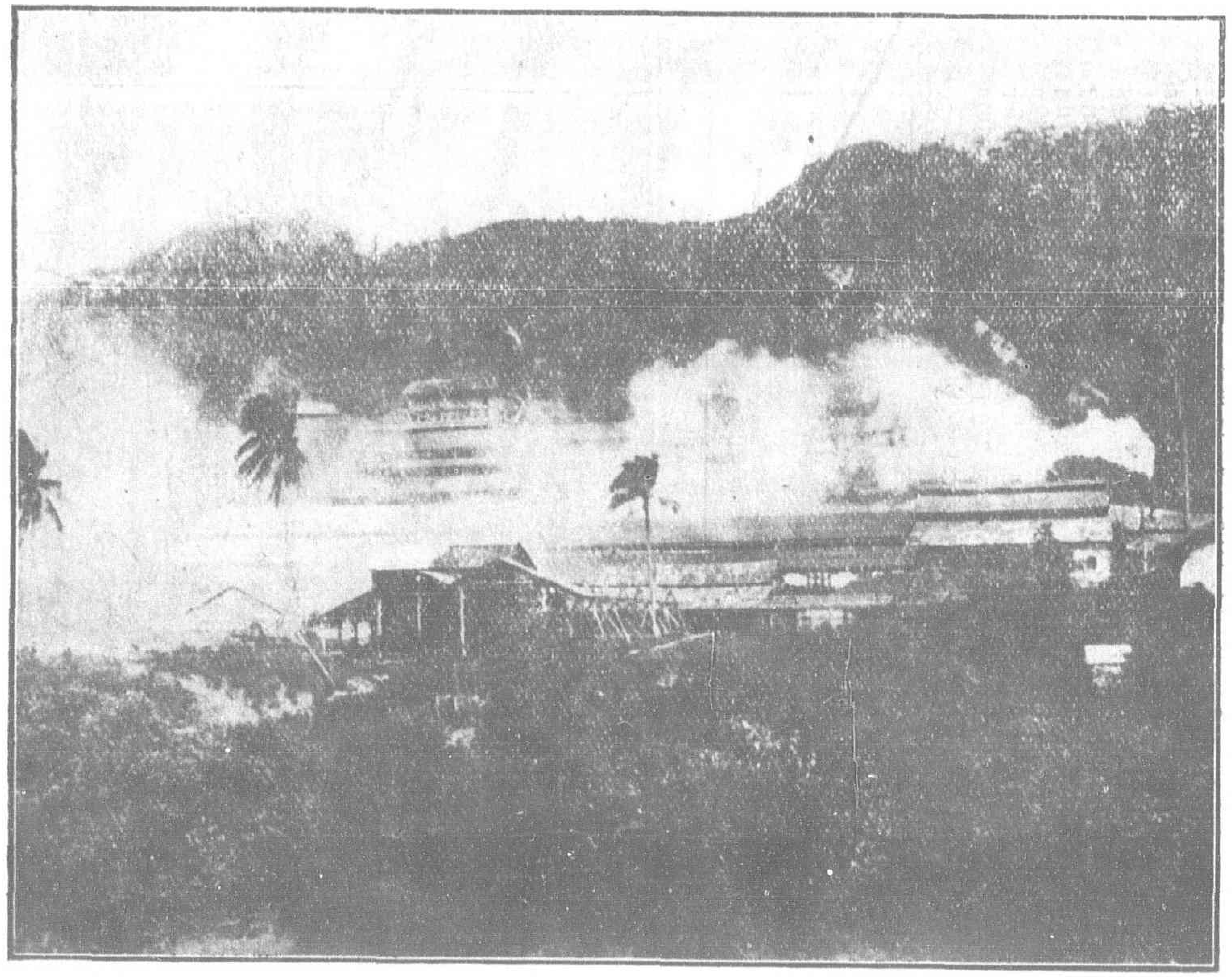
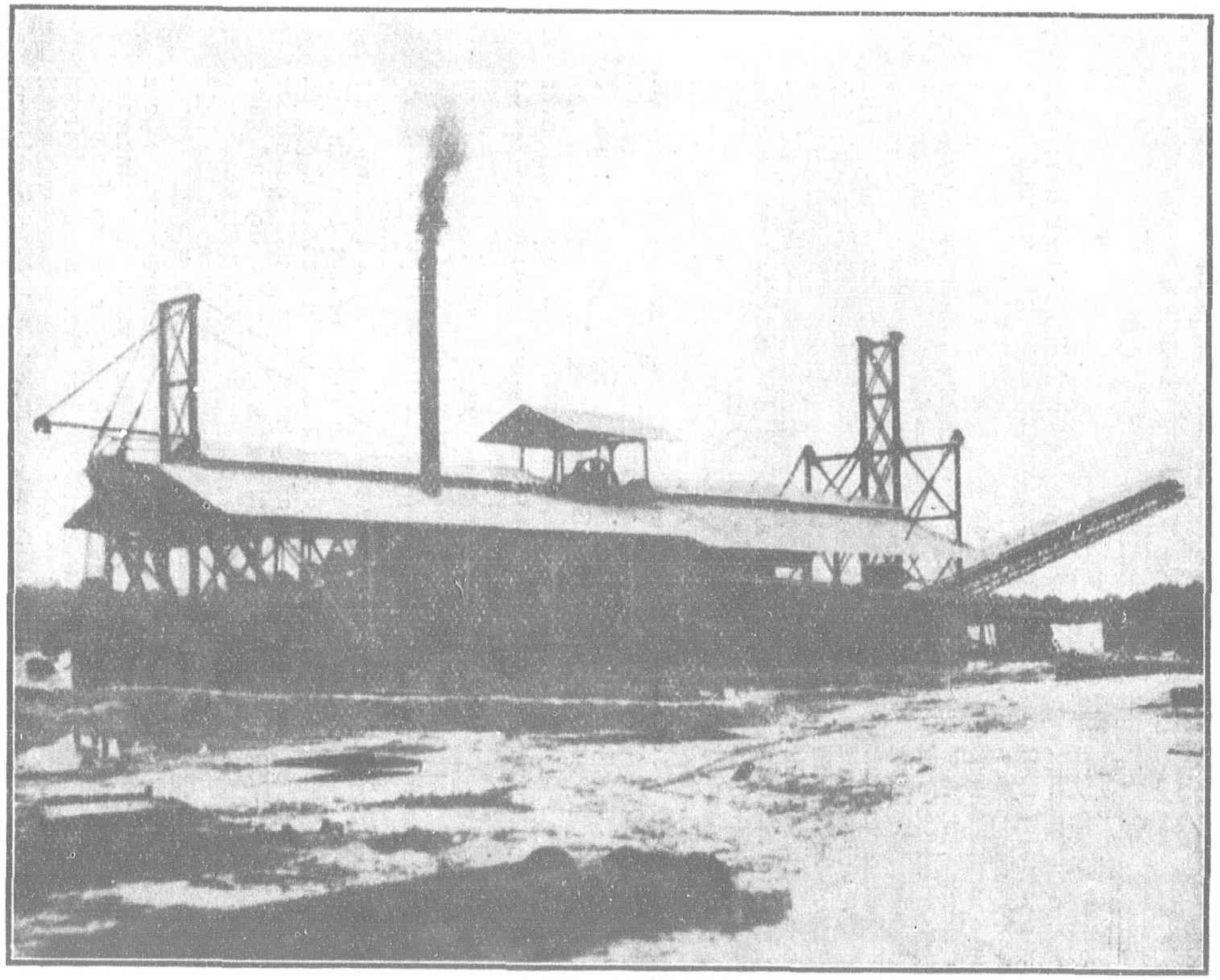
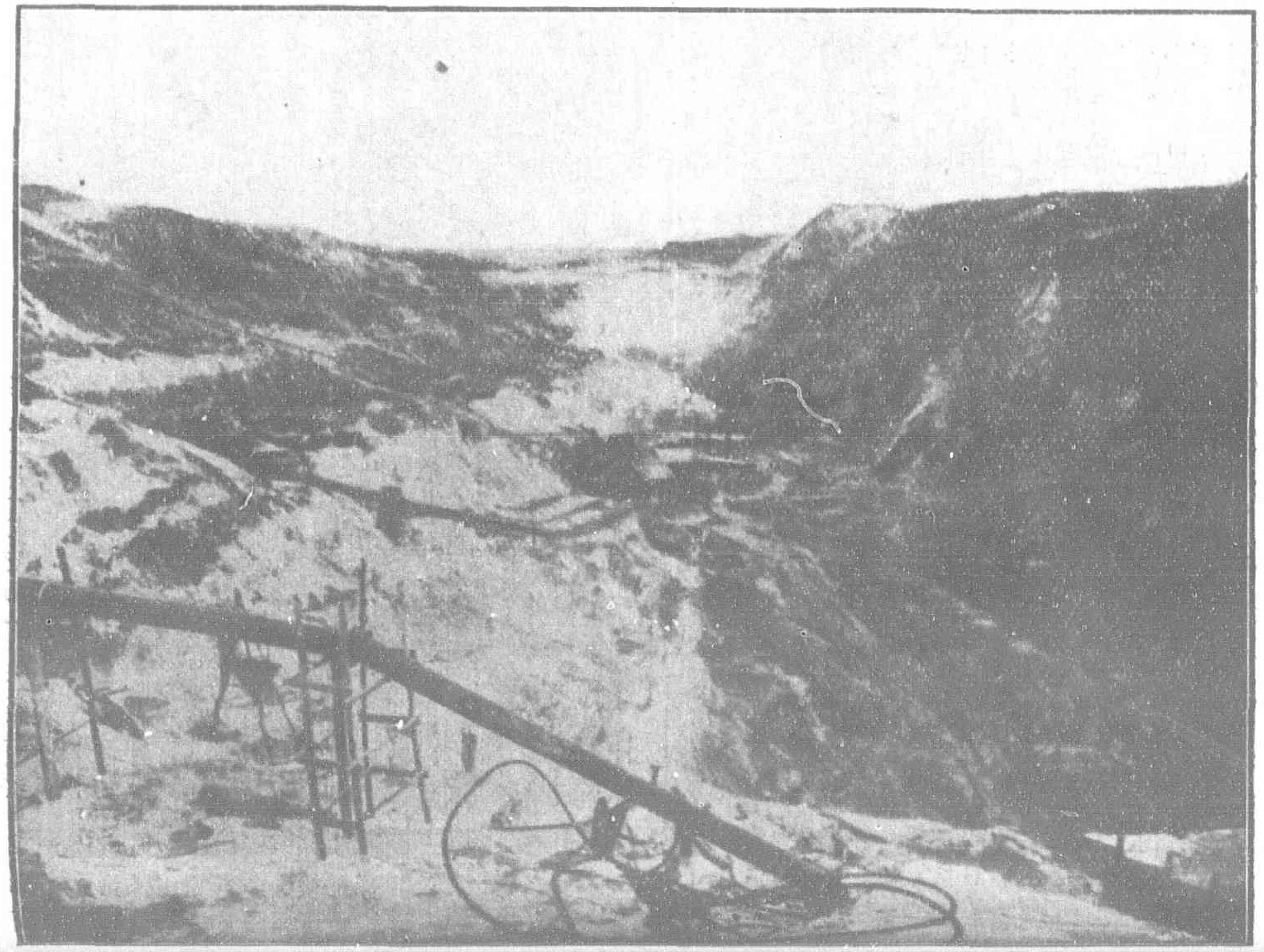
*Piculs of 133⅓ pounds; Straits Dollars of 57 cents gold.

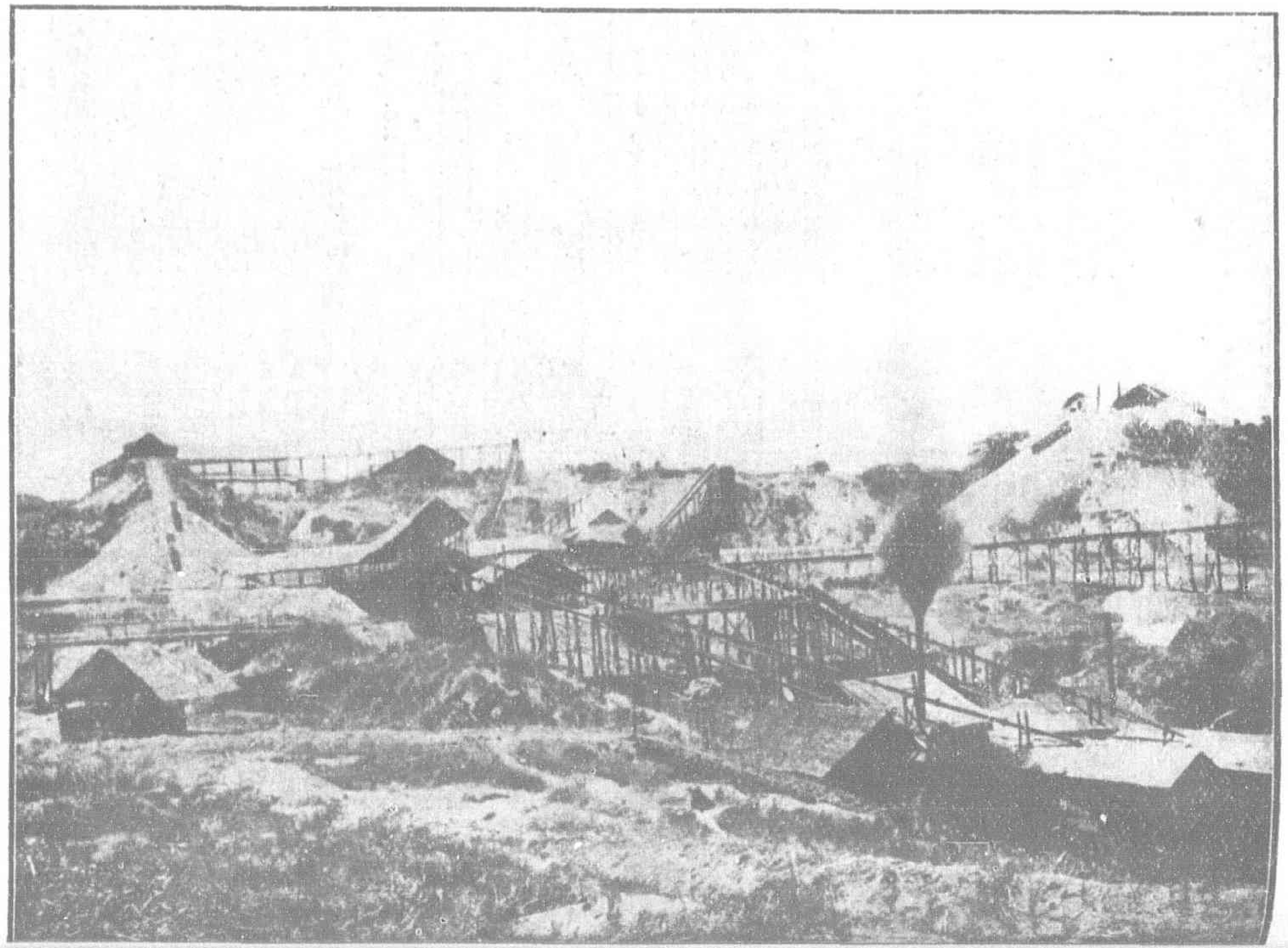


Pahang Consolidated Company's Mill at Sungei Leming, Pahang



Malayan Tin Dredging Ltd.'s No. 1 Dredge





The experience of the working of 1915 confirms the conclusion often expressed in these columns that the industry is too mature to evince rapid fluctuation. A sustained fall in the price of tin will always bring about a diminution in the labour force and gradually a declining output, but the effect is not usually fully seen for one or two years. The high price which tin has reached recently does not appear to have existed long enough to stem the tide of emigration. If the present decline in price continues the probability of a shortage in the output again this year is definitely increased. As against this probability, however, must be set the undoubted fact that the closing of the markets of Central Europe and the inactivity of our own tinplate trade must certainly diminish consumption.

RAWANG COALFIELD

The Rawang coalfield of the Malayan Collieries, Ltd., was recently inspected by members of the F. M. S. Chamber of Mines. The "drives" appear to run right through the heart of a huge seam of coal for there is coal on each side, coal overhead and coal underfoot. The main seam alone contains 10,000,000 tons of marketable coal. At Rawang the management have gone down 3,000 feet and found more coal than they can handle, their output being 400 tons a day.

From fire damp, the Rawang coal mine is quite free.

Rawang coal is of a pitch-black colour and breaks with a conchoidal fracture. Being fairly hard, it does not soil the fingers. It has a specific gravity of from 1.2 to 1.3 and is non-caking, while it burns with a long flame. The ash is white pulverulent and does not clinker.

Experiments show one ton of Rawang coal is equal to three tons of firewood, while one ton of Indian coal is equal to 1.06 ton of Rawang fuel. Against this slight difference, however, is one report that Rawang coal keeps up steam better and leaves no slag. There is also no heavy black smoke with Rawang coal, and, while it is slightly inferior to Japanese coal in other directions, it has a smaller ash and smaller sulphur percentage. Rawang coal freshly screened direct from the mine, and capable of being burned with close firebars despite its slightly lower evaporative powers, is said to have many advantages, quite apart from the question of price, over Japanese and Indian fuels. The demand for Rawang coal even now exceeds the supply.

The capital of the Malayan Collieries, Ltd., is $2,000,000, of which $1,500,000 has been issued and 1,433,250 paid up, while the Board of Directors comprise Messrs. J. A. Russell (Chairman), A. D. Allan, R. P. Brash, A. A. Henggeler, Loke Yew, C.M.G., and A. Grant Mackie, the Mine Manager being Mr. T. L. McCall. The Consulting Engineers are Messrs. Forster Brown & Rees, of London and Cardiff, and the London Agent is Mr. F. J. B. Dykes, late Warden of Mines, F.M.S

The mine is located at Batu Arang, in the mukim of Rawang, district of Ulu Selangor, Selangor, F.M.S. and the railway line to Batu Arang joins the main line of the F.M.S. Railways at Kuang Station. The area of the mine is 1,800 acres held under lease and 20,000 acres under prospecting licence, while the surface plant comprises a boiler house with two Babcock and Wilcox boilers with patent step-grate furnaces giving a heating surface of 2,531 square feet, to each boiler, and having an induced draught Sirocco fan, 40 inches in diameter, direct coupled to high speed steam engine, this fan being capable of giving two inches draught with three boilers under full power. The feed tank capacity is 30,000 gallons. The main engine house, comprising the haulage engine section, has two double-drum haulage engines, with loose drums, geared 3 to 1 for fast haulage and each engine has cylinders 12 in. diameter by 24 in. stroke while the electric generator section has two 100 kilowatt sets, 500 volts direct current, compound wound, interpole dynamos, by Mather and Platt, Limited, these being direct driven by high speed compound steam engines. The switchboard contains two generator panels, with overload and reverse current circuit breakers and equalising switches, and one feeder panel, with four distribution switches, while the motor-generator is 500 volts to 100 volts and is for electric lighting.

All cables carrying current to the mines, fan, and shops are special tropical twincore paper-insulated, lead-covered, laid in bitumen in stoneware troughing; but those carrying current in the mines are armoured, and suspended from the timbers.

The ventilating fan is 36 in. diameter and is of the "Turbon" mining type capable of passing 20,300 cubic feet of air at 4 in. water gauge.

The headstead or loading stage is a temporary structure of timber and the coal after being weighed is tipped on a screen which produces two sizes of coal while the mine has one-and-a-half miles of track connected with the F.M.S. Railways near Batu Arang Station. The sidings near the Heapstead have a grade of 1 in 90 to facilitate handling of waggons and a 60 ton weighbridge was installed by the F.M.S. Railways.

THREE COAL SEAMS DISCOVERED

There are three seams so far discovered; the main-seam, middle-seam, and north-seam, the main seam being divided into upper and lower leaf.

Mining at present is confined to the main-seam and its approximate section is as follows:

Roof...	... Shale.	
Coal ...	...17 feet 6 inches.	Upper Leaf.
Clay ...	... 1 foot to 2 feet.	
Coal ...	...12 feet to 18 feet.	Lower Leaf.
Grit ...	... 1 foot to 2½ feet.	
Coal ...	... 4 feet to 6 feet.	

Two haulage inclines, designated north and south mines respectively, follow the coal at a grade of 1 in 4¼ in the upper leaf of the main seam, and the system of working is pillar and stall, in panels.

In the south mine the present length of the incline is 900 feet, the vertical depth at face 260 feet, and the length of No. 1 level 1,100 feet, while in the north mine the present length of incline is 1,030 feet, and the vertical depth at face 262 feet. The present plant and mine capacity is 800/1000 tons daily, but as already said, the output at present is about 400 tons daily. The coal is at present marketed in three sizes, round, smalls and through coal, and a recent analysis made by Mr. Benedict Kitto, F.I.C., F.C.S., gave:—

Moisture...	14.00	per cent.
Ash	2.70	,,
Fixed Carbon	43.00	,,
Volatile Matter	40.30	,,
	100.00	
Contains Sulphur... ...	0.31	per cent.
Calories	6.160	,,
B.T.U.	11.088	,,
Evaporative value ...	11.4	lb.

MIJNBOUW MAATSCHAPPIJ REDJANG-LEBONG

This silver-gold producing company's property is in Sumatra, Dutch East Indies, a few hours from Singapore. The report of the general manager, F. C. Frey, is for the year 1915.

Development amounted to 1675 metres (5580 ft.) The ore-body was cut on No. 7 level of the middle shaft during May, but water makes further work slow. Possibilities of opening ore at depth are sufficiently encouraging to warrant sinking the shaft to No. 10 level; but with the electric power available this cannot be done yet. Drought interfered with operations last year. Two new power schemes have been investigated. Mine ventilation was improved. Old stopes were filled with 48,630 tons of waste. Ore reserves are estimated at 220,000 tons, assaying $8 gold and 2 oz. 8 dwt. silver per ton. During the year 13,094 tons of $9.50 gold and 2 oz. 17 dwt. silver ore was recovered from old stopes. This was formerly regarded as unprofitable. The value of the ore gets less with depth.

There were 70 stamps operated 293 days, and 6 tube-mills 248 days, crushing 83,329 tons of ore. This averaged $8.78 gold and 2 oz. 15 dwt. silver per ton. There was no amalgamation done. Pulp was classified into 67.5% for slime and 32.5% for sand treatment. The slime plant gave 94.83% gold and 84.59% silver recovery, and the sand plant 86.99% gold and 75.64% silver. Cyanide percolates with ease through sand averaging 80% passing 200-mesh. The total extraction of value was 90.69%. Metal recovery was 34,204 of gold and 186,678 oz. of silver, worth 1,951,500 florins (1 florin=40 cents). The cost was $6 per ton. Dividends absorbed 431,250 florins or $172,500. Employment was given to 45 Europeans and 1747 colored people. Among the experiments done during the year were included how to economize in cyanide and zinc, also the local treatment of slag.

TIN MINING IN SIAM

H.M. Minister at Bangkok has forwarded the following particulars, furnished by the Acting British Vice-Consul at Puket (Mr. G. A. Vesey Fitzgerald) after a tour undertaken by him in the Takuapa and Pangnga districts of Southern Siam in February last:—

At present operations in Takuapa are in the hands of the Chinese. The output from the district has for the last few years slightly exceeded 500 tons annually, but it has declined since the commencement of the war owing to the low price the metal has at times commanded. During the year ended March 31, 1915, 497 tons of metallic tin were recovered, while the amount for the succeeding nine months was 252 tons.

Some years ago a Danish company obtained a concession at Pong, some 500 acres in extent, for mining purposes. A subsidiary company was formed in London to work this area and others at Huey Yawt in Monthon Puket and at Nong Pet near Ronphibun in the adjoining Monthon of Nakon Sritamarat. The company expected its bucket dredge to arrive at the end of April, 1916, but owing to difficulties of transport between Takuapa and Pong it will not be possible to commence mining operations before April, 1917. The ground is said to average 1 lb. of tin oxide to the cubic yard.

Pangnga, like Takuapa, is mainly devoted to the production of tin, of which over 800 tons have been recovered during each of the last two years. For the nine months ended Dec. 31 last over 950 tons of metallic tin were produced, a considerable increase thus being shown.

Taimuang, some 40 miles from the town of Pangnga, is peopled almost entirely by Chinese. who are engaged in mining operations. The output of tin from the Muang of Pangnga is likely to increase in the future, whilst that from Taimuang is expected to remain stationary for the next three years, after which a rapid decline is anticipated. Considerable attention is now being given to the development of the tin-mining industry at Tung Maprow, which is also comprised in the Muang of Pangnga.

FOREIGN TRADE OF CHINA FOR 1915

[By F. E. Taylor, Statistical Secretary Chinese Maritime Customs]

The interference with commerce of the European war was very marked during 1915, principally owing to the scarcity of tonnage and to the rise in freights. But for this drawback it is quite plain that the year would have been one of very brisk trade, notwithstanding the unrest caused by the Japanese demands early in the year and the fears of possible disturbances when the announcement was made that a change in the form of Government was contemplated. The indignation aroused by the demands led to a campaign against Japanese goods that lasted for four months in some provinces, in spite of the steps taken by the Chinese Government to stop it, and must have resulted in serious loss to Japan, as the people not only refused to purchase Japanese goods, but shippers refrained at some ports from sending cargo by Japanese vessels. By the end of September the agitation had died out, but in the meanwhile Chinese manufacturers of certain goods similar to those imported from Japan, such as candles, soap, cigarettes, matches, towels, cotton underclothing, cotton cloth, boots and shoes, mirrors, sugar, and umbrellas, took advantage of the situation to push the sale of their goods.

The Chinese dealers did very well in tea, silk, antimony, and in aniline dyes which rose enormously in value and were resold at immense profit. The scarcity of chemical dyes and of synthetic indigo led to a revival of the cultivation of natural indigo, an interesting example of the rapidity with which Chinese farmers meet the demands of the market.

One of the features of the trade of the year has been the increased production and ready sale of cotton yarn and cotton piece goods manufactured in China. There are now over 30 cotton mills working, with 1,029,218 spindles and 4,610 looms, and further extensions are projected. The capacity is estimated at 800,000 bales of yarn and 1,383,000 pieces of 40 yards. The Ministry of Commerce reports that there are in Honan and Shantung 16,400,000 *mou* under cotton, in Szechwan, Kwangtung, Kwangsi, Hupeh, and Chekiang 11,100,000 *mou* making a total of 27,500,000 *mou*, with an estimated crop of 1,630,500 piculs of clean cotton.

The Japanese mills are said to have working 2,414,544 spindles and 24,223 looms. From which it will be seen that while the Japanese have one loom to 99 spindles, the Chinese have one to 223 spindles. The increase in the demand for Chinese machine-woven cloth seems certain to lead to the installation of more looms, and there is little doubt that the cotton spinning and weaving industry will show rapid and extensive development in certain lines.

The impossibility of obtaining money for railway building naturally resulted in an almost complete cessation of work. The influence of railways in extending trade was pointed out in the Report written last year, and it is greatly to be regretted that the difficulties should have arisen just when the importance of improving means of communication had been so clearly recognised that great extensions had been decided upon, and when so much was being done to carry out quite an imposing programme of construction. In the absence of funds to build railways, much might be done in the way of providing roads suitable for motor traffic, the value of which has been startlingly proved during the war. Such roads will, in any case, be needed to feed the railways when built, and meanwhile they would be of inestimable value in facilitating trade and in bringing all parts of the country into closer relations.

Lunkow Opened to Trade

Lungkow in the province of Shantung, was formally opened to foreign trade on the 1st November. It lies about 70 miles to the west of Chefoo, on the Gulf of Pechili, latitude 37°40′ N. and longitude 120°20′ E. The moneys in circulation consist of Mexican, Peiyang, and the new Republican dollars, marks, roubles, yen, and a variety of subsidiary coins. The Bank of China and the Bank of Communications have opened branch offices and issued banknotes. There is, in addition, a Japanese bank called the "Lungkow Bank," which has also issued notes. During the two months the importations were sufficient to show that foreign goods, especially Japanese cotton goods, are in demand, but no exports had yet appeared likely to find a market abroad.

Details concerning the course of trade during the year have been derived from the quarterly memoranda on trade sent to this Department from the ports, and it will be seen that most of the factors exercising marked influence on the trade were subsidiary to the disturbance caused by war. In addition to the dearth of tonnage and high freights, which were felt at all ports, the Manchurian ports were also affected by a fall in the rouble exchange, the large withdrawal of troops from the Amur province, the scarcity of railway stock, which was chiefly engaged by military traffic, and by the prohibition by the Russian Government in June to export many kinds of foodstuffs, as well as salt, tobacco, hay, straw, leather, hides, and copper.

The winter was one of unusual severity and heavy snowfalls, which interfered with traffic, while an exceptionally wet spring and a violent gale in September ruined the cart roads and damaged the crops. Imports were checked by the low value of the rouble but there was a noticeable increase in American and European medicines from Japan destined for Russia. The prices of many medicines rose enormously, some as much as 500 per cent., and metals were very much dearer. Zinc was three times as dear, galvanized iron sheets doubled in price, while galvanized iron wire rose 50 per cent.; iron plates and sheets, 40 per cent.; iron wire nails, 30 per cent.; copper, 40 per cent., and brass, 60 per cent. Japanese cotton goods lost in value owing to a decreased demand for a time, and were to a great extent replaced by similar goods manufactured in China, while Japanese medicines, so ably and energetically pushed by thousands of travelling Japanese pedlars throughout Manchuria, were not favoured by the Chinese. Notwithstanding the supply of natural indigo, the demand for artificial indigo was so great that a rise to three times the normal price did not check importation.

Belgian window glass was largely replaced by American and Japanese substitutes, and English galvanized iron by American. Flour milled in Shanghai and Hankow very largely replaced American flour, which formerly almost monopolised the Manchurian markets, as the Manchurian-milled flour, which is considered better, was not available in any quantity. Russian piece goods of certain classes were reported to be rapidly gaining favour in the districts served by Newchwang. Chinese matches, owing to the unpopularity of Japanese goods which gave them an opening, appear to be now ousting Japan matches. Kerosene oil from the Yechigo district in Japan has made its appearance in the Manchurian markets, and is likely to enter into severe competition with the other kinds.

As regards exports, there was a good demand for beans, beancake, bean oil, wheat, and barley, but the fall in the rouble exchange and poor crops made the price of wheat almost prohibitive and checked the outflow to the Russian mills at Habarovsk and Blagovestchensk. The effects of the 1914 floods were still felt, and the constant high water interfered with the crops, while there was an outbreak of rinderpest, which led the Japanese authorities to prohibit the crossing of the Tumen River by Korean ox-carts during the continuance of the outbreak. The demand for silk cleared off the accumulated stocks, and trade in this staple was brisk throughout the year, showing a marked improvement over 1914. The timber trade was greatly assisted by the high freights prevailing, which operated against Japanese and American importations, and the general tendency of sellers was to hold out for better prices.

The crop of beans is reported to have been less by 20 per cent. than that of 1914, and export was very seriously impeded by lack of tonnage and high freights. Japan bought large quantities of beancake to be used as a fertiliser to remedy a scarcity of sulphate of ammonia and other chemical manures wanted for the rice fields. Bean oil was wanted by America in consequence of a sudden rise in the price of cotton seed there, and there was also a good demand from Europe and Japan, but great difficulty was experienced in getting away the increased production.

Steamers on the Amur

A daily service of two small steamers along the Chinese bank of the Amur, from Taheiho to Nikanka (below Aigun), interfered considerably with the junk trade. Immigration is increasing and more land is constantly being brought under cultivation. The Russian Government not only stopped many exports into Chinese territory, but also commenced the levy of import duties on goods formerly imported free from China. In November the British Government, in view of the fact that, while the export of beans and bean oil from Vladivostock to neutral countries had been forbidden, no such restrictions were imposed on similar goods exported from Dairen, proposed that, pending the conclusion of satisfactory arrangements to prevent such goods from reaching enemy countries, the Japanese Government should prohibit the export of beans and bean oil from Dairen to neutral countries unless they first touched at an English port. There were various objections to this proposal and it appears to have fallen through but the prohibition by the British Government of the re-export of cereals, etc., from England overstocked the market there and acted as a check on exportations from Manchuria.

The Dairen Commissioner reports that the first pig iron was turned out by the Penkihu Colliery and Iron Mining Company on the 16th January. The annual output is estimated at 30,000 tons, valued at 1 million gold yen, and will be shipped to Japan from Dairen in the winter and from Newchwang at other seasons. The South Manchuria Railway Company made a call on the shareholders of 4 millions of yen to capitalise various new enterprises. The passing by the Japanese Imperial Diet of a bill for the establishment of a special bank to finance Japanese enterprises in Manchuria and Mongolia was warmly welcomed in commercial circles. The Dairen Savings Bank increased its capital and was reorganised as an ordinary bank, and there is a general tendency to expansion in all banking activities. One of the pits at the Fushun coal mines was destroyed by fire.

The South Manchuria Railway experimental mill for extracting oil from beans by a chemical process has been sold to Suzuki & Co., of Kobe. The process has proved to give profitable results, and the new owners contemplate the enlargement of the mill and doubling the output. It is quite evident that the trade of Manchuria will, when normal conditions prevail, show a large and constant increase and the probabilities are that the increase will be very rapid.

Considerable interest was aroused by the announcement of the Haiho Conservancy Board that it was intended to keep the Peiho River open to navigation during the winter by means of ice-breakers, and the efforts made were completely successful until the middle of January, when the abnormally low temperature blocked the entrance and thick ice was encountered 60 miles outside the bar. Unfortunately, the shipping companies did not anticipate such a measure of success as was secured, and the number of steamers sent up was quite insufficient to cope with the amount of cargo offering. Given a moderate winter of normal conditions, the Board is confident that it will be entirely successful in future. When the season opened there was a strong demand for foreign goods, and higher freights and prices did not much affect arrivals except in the case of cotton piece goods. As the year went on prices continued to rise from the causes already sufficiently indicated: many kinds of piece goods could not be supplied at all for want of the requisite dyes, Chinese dealers were slow to realise that as long as the war continues there can be no hope of more favourable conditions, and importers found it impossible to obtain firm prices for forward delivery or to guarantee any specified time of arrival.

Work on the breakwater at Chefoo* commenced on the 2nd August. It is worth noting that cargo such as silk and straw braid formerly sent to Kiaochow for shipment was diverted to Chefoo, but this is hardly likely to continue now that the Chinese Maritime Customs are again established and the port is once more subject to regulations with which shippers are familiar. At Kiaochow the currency is Japanese silver yen, but coins are rarely seen in actual circulation, Japanese war notes and Yokohama Specie Bank notes being legal tender to unlimited amounts. Business is at present almost monopolised by Japanese, since the uncertainty about the future status of the port prevents Chinese and European capitalists from undertaking business on any large scale.

Trade on the Yangtze

On the Yangtze the year opened with dull trade, but there was on the whole progress improvement, chiefly due to good crops. The campaign against Japanese shipping and goods was for a time felt rather severely at some of the river ports, but at Hankow the authority of the Government rendered it practically abortive. Had it not been for the shortage in tonnage which hampered imports by the extra cost and made it difficult to send away exports, it is evident that the year would have been one of exceptional prosperity, especially as, with the exception of Szechwan, all the districts served by the river ports were free from serious disturbance or brigandage. Extraordinary profits were made by dealers in tea and other produce, and the rice crop was plentiful, while beans and beancake, groundnuts and seeds of all kinds, as well as oils, were in demand.

In Szechwan brigandage was unfortunately still rife and restricted the movements of cargo and silver, a condition that lasted throughout the year; and drought so seriously injured the rice crop that the price was more than doubled. From the 1st June the Salt authorities ceased to accept the depreciated military dollar notes in payment of dues, which led to a further depreciation in the exchange value of the notes, and on the 1st September the Government commenced to redeem Szechwan military notes of 5 dollars denomination at a discount of 50 per cent., the 1-dollar notes to be redeemable at the same discount from the 1st November.

The preliminary surveys of the Ichang-Kweichowfu section of the Ichang-Chengtu Railway were completed, but construction work awaits the provision of the necessary funds. The steam traffic between Ichang and Chungking has proved so profitable that more vessels will be added to the run. The demand for antimony sent the price up rapidly. Before the war antimony regulus paid an *ad valorem* export duty on a conventional value of Hk. Tls. 80 per ton, whereas it paid during the December quarter at Changsha on a value between Hk. Tls. 800 and 900 per ton. The export of quicksilver, required for making fulminates, was greatly stimulated. There was a brisk demand from London for sesamum seed up to the 10th March, but the prohibition against all re-export of seeds, followed by an advance in freight of 75 per cent., completely stopped all business and stock accumulated until in the autumn improved shipping facilities to Genoa cleared off the stocks, which holders were anxious to get rid of and parted with at cheaper prices than prevailed in the spring.

Imports showed the same symptoms as were mentioned above regarding trade in the North; that is to say, during the campaign against Japanese goods there was a temporarily increased demand for British and American piece goods, while Chinese manufactures made considerable headway. In the South the piece goods trade was, as elsewhere, hampered by delayed deliveries and by the difficulty of obtaining colours to suit the market, while the shortage of dyes hindered the clearance of white and grey shirtings. There was an active demand for fancy goods at enhanced prices, but woolen goods were too dear and were also difficult to obtain from Europe, so that old stocks were gradually cleared off. Metals, also, went up very much in price. Flour was in short supply, and American prices were up in consequence of high freights. No flour came from Australia, and Chinese-milled flour found a ready sale. In cotton yarn Japanese 20's seem to have driven out the Bombay count. The campaign against Japanese goods seems to have been more effective in the South than in North and Central China, but it did not last long.

Piracy on the Canton River was not quite so frequent, owing to the policy of establishing patrols and garrisoning dangerous localities, but the North River was still so unsafe for native craft that most of the freight has been diverted to the railway. Junks only travel in fleets, and engage "soldiers." who are supplied by agents guaranteeing a safe passage. The junks pay, it is said, a fee of 5 per cent. of the value of their cargo, and the agents pay the pirates to leave them alone, both agents and "soldiers" being part of the pirate organisation.

The disastrous floods in July, the worst ever recorded in the West River basin, destroyed the whole of the first rice crop and in some districts reduced the amount of the second crop, and also caused great loss of life. All the dikes along the West River and most of those bordering the North River were broken, and it is estimated that it will cost 7 millions of dollars to repair them. The bursting of a dike on the North River about 23 miles above Canton caused the destruction of 2,000 houses in the city of Canton, and another 400 houses were destroyed by a conflagration said to have been started by incendiaries. The silk districts suffered enormous damage and the production was greatly lowered. A few direct shipments of hides from Wuchow to London were so successful that this trade seems likely to develop. Although the principal market for cassia—Germany—was closed, there was an increased demand from Great Britain and America.

Antimony, which is found all along the upper part of the West River, was called for in very large quantities, and steps were taken to encourage the establishment of smelting works. The frontier ports in Yunnan also port the export of antimony. From Kiungchow there was a small export of rubber, grown in the island, and coffee is being experimented with. Some 3,900 tons of manganese ore were exported from Pakhoi to Japan, and the deposits are said to be extensive but rather reduced in value by the presence of phosphorus.

The heavy rainfalls that caused the floods in Kwangtung province were also responsible for serious damage to the Amichow-Yunnanfu line by causing immense landslips. In the narrowest part of the Namti Valley a whole mountain side of 10,000 cubic tons rushed into the river, and the total damage was so great that traffic was for a time completely suspended. The whole Tonkin delta was inundated, and Hanoi was threatened, so that at one time all communication with Tonkin was stopped. Trade naturally suffered from these conditions.

The total collection during 1915 was Hk. Tls. 36,747,706, a decrease of Hk. Tls. 2,169,818 as compared with 1914, but better than any year previous to 1912. Of the decrease, Hk. Tls. 926,694 was due to reduced receipts from opium duty and likin, and Hk. Tls. 206,900 to a loss in tonnage dues, leaving only Hk. Tls. 946.134 as the fall in the amount of dues and duties collected from general merchandise. Import duties were lower by Hk. Tls. 3.571.825 and transit dues by Hk. Tls. 32.303; but export duties increased by Hk. Tls. 2,395,990 and coast trade duties by Hk. Tls. 262.004. From these figures it is clear that, while the Chinese bought fewer foreign goods on account of their dearness and the difficulty of procuring them, the trade in Chinese produce was better than ever, as is proved by the fact that the export duties of Hk. Tls. 15,439.709 were the highest on record.

The value of the direct foreign trade was Hk. Tls. 873,336,883, a falling off of Hk. Tls. 52.131.128 as compared with the value in 1914, but was still higher than in any year previous to 1913. The value of the direct foreign imports was less by Hk. Tls. 114,765.663, but exports increased by Hk. Tls. 62.634,535, and the value of Hk. Tls. 418,861,164 was higher than any previous record. The statistics from Kiaochow cover only four months, from the 1st September, when the control of the Custom House was restored to the Inspectorate General of Customs, and it is possible that about 14 millions of taels should be deducted from the recorded loss of trade.

Opium Stocks Decrease

The net quantity of opium imported, that is, released from bond for consumption after payment of duty and likin, was 4,447 piculs, as against 7,484 piculs in 1914. At the end of 1914 there were 5,381 chests and 23 half-chests in bond in China, 1,917 chests in Hongkong, and 18 chests afloat between Hongkong and Shanghai, and 1915 closed with 2,488 chests and 12 half-chests in bond in China (all in Shanghai) and 973 chests and 1 half-chest in Hongkong. The price at the commencement of the year was approximately *Shanghai* Tls. 7,000 to 7,400, which by the 31st December had risen to Tls. 8,700 to 9,000. During the year the provinces of Kansu and the New Dominion (Sinkiang) were added to the provinces into which, as being free from poppy cultivation the importation of foreign and Chinese opium is forbidden under the Anglo-Chinese Agreement of 1911.

Two events of interest in connexion with the opium trade took place during the year. The first was that opium merchants agreed to pay to the Chinese Government a voluntary contribution of $5,500 per chest on a stock of 6,000 chests. The second was the sale by the opium merchants to the Kwangtung authorities of 1,200 chests at the rate of *Shanghai* Tls. 7,100 per chest: delivery to take place by monthly instalments during a period not exceeding 18 months. On the 1st November the Kwangtung authorities established an official department, known as the Government Prepared Opium Examination Department with sub-offices in every district, where opium was sold at the rate of $15 per tael weight. The merchants having resigned their right to ship any further stocks to Kwangtung, this department practically constituted a monopoly, but the price charged was too high to attract the general public, who found it more economical to procure supplies through less legitimate channels.

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* A full account of the progress on the Chefoo Breakwater appeared in THE FAR EASTERN REVIEW for April, 1916.

As was to be expected, the prohibition of import and the difficulty of obtaining the drug led to smuggling on an extensive scale. Large seizures have been made in Hongkong and Shanghai on British vessels, but the immense rise of the price in China yields profits that more than cover the loss of a good proportion of the consignments. The result has been that regular traders have found some difficulty in disposing of the stocks remaining on their hands. Another and more serious result of the prohibition of opium has been the spreading of the morphia habit, which has led to the development of one of the most profitable trades in the country.

The importation into China of morphia and instruments for its injection is absolutely prohibited, except by foreign medical practitioners and foreign druggists for medicinal purposes and under special rules, but the drug is so easily smuggled that the prohibition is practically a dead letter. Morphia is manufactured chiefly in Great Britain, Germany, and Austria, and is sent to Japan by registered post *via* Siberia. It is released by the Post Office in Japan after payment of import duty, which is refunded on re-export to Korea or Dairen, and now presumably to Kiaochow. No refund of duty can be claimed on re-export to China, because the importation into China is forbidden.

Large quantities of morphia are introduced into Manchuria, where the evil habit is spreading rapidly, and Shantung is now in a favourable position to obtain the drug; while the commencement of morphia manufacture in Formosa leads to the expectation that the province of Fukien will not be neglected. In Harbin the Russian authorities take rigorous steps to prevent the sale of the drug, any Russian subject found in possession of the poison being sent to prison, while Chinese offenders are handed over to the Chinese authorities. But the Russian police cannot arrest Japanese without the consent of the Japanese Consul. In the Japanese Railway Settlement of Changchun the traffic goes on quite openly.

The Japanese dealers employ Chinese agents, who carry a quantity of filled syringes and give injections in quiet corners and back streets for 3 or 4 cents. In this way the deplorable morphia habit is being rapidly spread, and its effects are much worse and much more quickly apparent than those caused by opium smoking, as the victim soon becomes incapable of work of any kind. It has been estimated that the annual profits of this disastrous traffic do not fall far short of £1,000,000.

Cotton Goods Imports

The value of cotton goods imported fell from Hk. Tls. 183,328,473 in 1914 to Hk. Tls. 149,300,513 but this comparison gives quite an imperfect impression of what the actual diminution in trade amounted to and of the embarrassments with which importers had to contend, since higher prices hide the comparatively greater falling off in quantities. White being the symbol of mourning in China, all white clothes for external wear must be dyed, and dyes were either entirely wanting or only to be had at almost prohibitive prices. Rising freights and the impossibility of fixing forward prices or time of delivery added to the difficulty of doing business, and the result is shown very plainly in the statistics of imports. Plain grey shirtings fell from 3,675,241 to 3,282,510 pieces; plain grey sheetings, from 5,766,232 to 3.046,372 pieces; white shirtings, from 4,498,304 to 3,232,273 pieces; drills, from 2,384,015 to 1,717,794 pieces; jeans, from 1,988,267 to 1,813,058 pieces. High freights from America and Europe assisted the Japanese trade, and we find a marked increase in Japanese shirtings, jeans, T-cloths, cotton flannel, cotton cloth, and handkerchiefs, the increase in jeans amounting to 500,000 pieces. While white goods were hampered by the lack of dyes in China, coloured goods were handicapped by the difficulty of procuring shades wanted by the market, and the same decrease in arrivals is found throughout the list, with the exception of the Japanese goods mentioned.

It may be interesting to show the way in which the dearth of dyes has reacted upon the piece goods trade. Before the invention of synthetic indigo the Chinese used vegetable indigo for dyeing white cloth; but the results obtained were not so satisfactory as those derived from the use of the chemical product, as colour and quality were variable and cloth required to be dipped at least twice before anything approaching a uniform tint was secured. The synthetic indigo, proving not only more efficient but cheaper in use, gradually drove indigo out of cultivation, and although a certain quantity was grown last summer to meet the insistent demand, the supply was far from sufficient and the price was high. There were some stocks of aniline dyes in the country when war broke out, and the lucky holders have made handsome fortunes. The following is an approximately correct statement of the difference in the cost of dyeing per piece of 20 yards before the war and at the present time:—

	Before the War.	At Present.
	$	$
White Shirtings: blue...	0.25	2.70
,, ,, pink and scarlet	0.10	1.50
Grey shirtings: blue......	0.25	3.00
Grey sheetings: blue......	0.50	4.00
.. ,, black ...	1.00	3.00

It is said that the cost of dyeing cotton cloth woven in the country from imported cotton yarn is equal to the cost of yarn and of the labour employed in weaving. Woollen and cotton mixtures and woollen goods, as also miscellaneous piece goods, show still more serious decreases, and metals were almost worse. Among sundries we notice the disappearance of aniline dyes and artificial indigo, and a falling away in needles from 2,566,599 to 399,457 mille. The Chinese shops are now charging 10 cents for two needles. Sugar was very dear and the consumption was checked, the total importation of all kinds falling from 6,266.002 to 4.776,581 piculs. American kerosene oil, owing to dearness caused by high freights and lack of tonnage, fell from 162 to 129 millions of gallons, and Russian from 7,200,700 to 857,155 gallons. Sumatra oil lost 7 millions of gallons, but Borneo oil improved by a million. Japanese kerosene oil rose from 514,470 gallons in 1914 to 1,226,263 gallons. This oil is said to be of inferior quality, but it is cheap, and as the sale will be vigorously pushed, the importation is likely to increase rapidly. The growing industry of matchmaking is responsible for a smaller importation of matches by 3 million gross. The import of timber, owing to high freights from America, fell off considerably, softwood falling from 204,075,845 to 88,372,228 square feet. Speaking generally, the import trade in all classes of goods suffered heavy diminution, not because the demand was wanting, but because the war sent up prices and reduced the amount of tonnage available for cargo.

Exports Make New Record

As said above, the value of the exports was the highest ever recorded, and it would have been higher but for the shortness of cargo space and greatly increased rates of freight. Chinese cotton goods showed a remarkable advance, and metals were in great demand. Antimony rose from 327,727 to 386,200 piculs; copper ingots and slabs, from 1,829 to 45,084 piculs; pig iron, from 991,266 to 1,596,180 piculs; tin, from 119,225 to 132,379 piculs; zinc, from 5,123 to 38,490 piculs; and unclassed metals, from 32,634 to 148,090 piculs. Beans of all kinds were taken freely, as were other foodstuffs. Fibres did well. Liquid indigo rose from 13,830 to 53,660 piculs. Bean oil advanced from 607,477 to 1,017,922 piculs, and peas from 277,350 to 403,469 piculs. Cotton seed, rape seed, and sesamum seed were shipped in greatly increased quantities. There was a brisk demand for tanned and untanned goat skins, and for other skins and furs.

As regards silk, wild silk found a ready sale and all stocks remaining over from the previous year were rapidly cleared off owing to demands from Japan and elsewhere. The crop in Manchuria was rather seriously affected by the heavy rains, which made the cocoons lighter and dearer, and the production was less, but the year was profitable as the market was strong and good prices were realised. The total export amounted to 34,004 piculs, as against 21,072 piculs in 1914. There was a distinct revival in the demand for white and yellow raw silk, the exports being 109,093 piculs, as against 87,517 in the previous year. This result is the more satisfactory as from all the producing districts reports came of short crops of cocoons. In the Canton districts floods caused immense damage, and the price of silk was forced up to $900 per picul. While the war caused a diminution of consumption in Europe, and brought about a scarcity of skilled workmen and also of dyes, which prevented orders for silk piece goods from being filled, the entry of Turkey into the war cut off supplies from the Levant and Central Asia, and the participation of Italy also checked business. Demand from America was strong, and it was only due to unfortunate climatic conditions that the export was not greater. All the Chinese merchants connected with the trade did extremely well.

The tea market opened in Hankow on the 15th May, a week later than in 1914, and the season proved the most profitable one in the history of the port. Buyers were anxious to secure as much as possible, and quantity was more considered than quality. The commonest teas that brought from Tls. 12 to 17 in 1914 were eagerly taken at Tls. 32, and the largest profits were made in the lower grades, the best qualities yielding more modest gains. It is said that the Chinese dealers made 100 per cent. on their purchases of the first crop, and the second crop also fetched handsome prices. Quality was above the average. The same remarks apply to the Kiukiang and Foochow markets. In July the adverse effects of the low rouble exchange began to be felt, and there was a cessation of buying for Russia, which reduced prices considerably, until in November a renewed demand for the balance remaining in stock somewhat raised them again. The total exports from China were: black tea, 771,141 piculs, as against 613,296 piculs in 1914; green tea, 306,324 piculs, as against 266,738 piculs; brick tea, both black and green, and tablet tea also showed satisfactory advances. The Chinese dealers are very hopeful about the prospects of the trade for 1916, but if they would insist on an improvement in cultivation and manufacture they would find it yield more profitable results than even the cessation of the war, upon which they base their hopes. As a matter of fact, the size of the stocks in London, and a lowered consumption, together with the great rise in the silver exchange and in freights, make it very improbable that the 1916 season will be as prosperous for them as its predecessor, and they are likely to be rudely disappointed in their expectations of equally good prices and to find, on the contrary, that their profits will be on a much more moderate scale.

Shipping Shows Decrease

The tonnage of steamers entered and cleared amounted to 84,641,227 tons, being 6,485,013 tons less than in 1914. Sailing vessels showed a total of 6,021,778 tons and a loss of 836,193 tons. These figures include the tonnage of Chinese shipping, which amounted to 18,655,411 tons for steamers and for sailing vessels of foreign type and 5,503,598 tons for junks. Throughout the year there was more cargo offering for foreign ports than could be accommodated by the available tonnage, although a certain number of Japanese, Norwegian, and Chinese steamers were diverted from the coasting trade to the more profitable employment. The Indo-China Steam Navigation Company removed a few of their regular coasting steamers to southern trades, but the

China Navigation Company and the China Merchants' Company ran their steamers mostly on the usual routes, while the China Navigation Company employed several additional vessels on the coasting trade. All steamers on the coast and on inland waters were kept very busy, and rates of freight advanced. The demand for tonnage for Europe, America, and Australia was much in excess of the supply, and the export trade was, in consequence, considerably curtailed. There was a diminution in American tonnage of about 200,000 tons, in British of about 1,500,000 tons, in Danish of 24,000 tons, in French of 337,000 tons, in Japanese of 120,000 tons, in Russian of 32,000 tons, in Portuguese of 150,000 tons; while the Austrian flag disappeared and German tonnage fell from 4,026,493 to 58,263 tons, represented by small steamers plying on inland waters. The Dutch flag improved by 100,000 tons and the Swedish by 29,000 tons. Norwegian and Chinese remained about the same, except that there was a falling off in the junk trade.

Exchange ruled low at the commencement of the year, opening in Shanghai at 2s. 2¾d. for the tael. It gradually rose to 2s. 4d. until July, when a drop of one penny took place until the middle of August, when it stood at 2s. 3d. From that date it rose steadily, with a sudden jump of threepence in the last half of November, and the year ended with the tael at 2s. 7¾d., a rise of nearly 20 per cent. during the year. It will be noticed in the table of treasure imported from and exported to foreign countries that the export of treasure was greatly in excess of the import, which was hardly to be expected in view of the fact that the value of the export trade was the highest on record. This may be partly explained by the fact that in the early part of the year, when trade was still dull, treasure was going away in consequence of the falling off of the exports in 1914. But towards the end of the year conditions had changed and, in spite of the higher exchange, exports were so brisk that money was required to pay for them. There was in consequence a great diminution in the stocks held by the banks, which on the 31st December had fallen to Tls. 39,439,000 and $17,500,000 in Shanghai, as the money had been drawn out to go up country to pay for produce. The plausibility of this solution is supported by the fact that gold has been returning since the close of the year, and at the time of writing is still coming in. As regards gold, which in China is not used for currency and is bought and sold like any other commodity, there was a profit to be made by selling owing to the demand caused by the war, and Chinese speculators bought largely. It is said that there was a considerable exportation both from China and Japan to supply a shortage in America. Russia took Hk. Tls. 8,388,224 in silver for coining purposes. Half the movement of treasure was between Hongkong and Chinese ports, and treasure held in Hongkong may be regarded as remaining in China. The copper coins mentioned in the table as exported were Japanese copper cash, sent back from Hankow.

About 15 years ago a training college was established in Shanghai by the Japanese, known as the Tungya T'ungwen Shu-yuan, which was assisted by Government funds. The students, of whom there are at present about 300, are specially trained for work in China. The college course lasts for three years, and 900 students have already passed through and are now at work in different parts of China, pushing their country's commercial interests. A large site has been secured at Siccawei, and new and suitable premises are to be erected shortly. In 1908 the value of Japan's direct trade with China was Hk. Tls. 89,620,908, and in 1915 it amounted to Hk. Tls. 197,926,331, without including the unrecorded trade at Kiaochow during eight months of the year, probably worth another 14 millions. From which it would appear that results have fully justified Japanese methods of developing trade.

COTTON SPINNING IN JAPAN

One of the leading industrialists in Japan, Mr. Yamaji Muto, managing director of the Kanegafuchi Spinning Co., the largest concern of the kind in Japan, has an interesting article in the Koshi Keizai, the following being a translation:

The cotton spinning trade generally believe that the industry is now in a state of greater prosperity than any other industry in Japan. This might be so when we make comparison only among those that exist within the empire, but if we once compare it with the spinning industry throughout the world, we cannot but feel pessimistic.

In reviewing the cotton spinning industry, we find only 2,800,000 spindles, which consume 2,500,000 tons of raw cotton, the product amounting to Y220,000,000. Of this the quantity that is exported to China and India in finished and half-finished goods—thread and fabrics—is estimated at about Y100,000,000. Compared with other Japanese industries it might perhaps be the greatest and most profitable, but it cannot be compared with the scale abroad. As the total number of spindles in the world is now believed to be over 150,000,000, Japan's is only a little over one hundredth of this aggregate. Russia is regarded as the most rudimental country in this particular industry among the nations, yet she has 9,000,000 spindles which work day and night incessantly. In other words Russia is over three times greater in this respect than Japan, and even India has twice the number we possess. Thus making our position clear, we cannot help feeling somewhat ashamed of our dull growth in spite of the fact that our island country is matchlessly adapted for this industry.

The Value of Cotton Thread in Oriental Markets

The time when Japan can really compete with western countries in foreign trade is still remote. As to the present state of our trade, the raw cotton that we import costs one-third of all our imports, and the finished export goods from this raw material renders as much as one-sixth of the entire income from the export trade. Consequently, it cannot be denied that cotton is one of the most important elements in our foreign trade. The only market for our cotton goods, however, is limited to a narrow section of China. China imports annually Y250,000,000 worth of cotton thread and fabrics; Great Britain alone commands over Y100,000,000 of this huge trade and other western countries also share in the trade. Japan has wonderfully increased her export there in recent years, but it amounts to only about Y80,000,000.

India pays the surprising sum of Y400,000,000 per year for cotton thread and cotton goods, of which Japan's share is not more than three per cent and the remaining ninety-seven per cent is practically monopolised by Great Britain.

Thus our cotton industry is still in an embryonic state, and if Japan hopes for its development she must endeavour to expand the market in these gigantic countries. It is all very well to say that our goods have been securing a foothold more and more in India while Great Britain has not been able to import as much as she usually does owing to war. But if Great Britain attempts after the war to impair our trade, putting heavy import duties on our goods in India our efforts will be fruitless. Thus the British attitude in fixing customs duty upon our goods after the war will have a life-and-death effect. Since that is to be the prospect of the trade can our manufacturers produce goods as excellent in quality as those of Manchester? As Britain's future policy will have the heaviest influence upon our cotton-spinning industry in future, our manufacturers must secure the best possible machinery on the one hand and on the other, place the most skilled, the ablest artisans at the looms, in order to improve the quality of our goods.

Future of Chinese Customs--Duty Question

It is well known that China has been suffering from financial difficulties; she now plans to put heavy import duties on foreign goods so as to seek salvation by increasing her revenue. This is another most important question that all our cotton produce merchants must face in the near future. If China takes a friendly, generous policy toward this question of import duty, our nation must also show the people of China a good, generous example. But contrary to this, if Japan enforces a severe protection policy for her products and demands that the Chinese abandon a similar policy Japan is unreasonable and partial.

Cotton-mills in China

When China increases her import duty there is no other course for our industrialists than to move into China, build new cotton mills, and thus escape the heavy burden. In erecting such mills in China, however, is not only the difficulty of securing the skilled labour but innumerable inconveniencies will arise, and the situation must be studied very carefully. It is not yet settled among the Chinese authorities whether that nation adopt the protected or free trade policy, and of course, it might be a hard task for her at this moment to abandon her protection policy entirely. When one considers impartially and thoughtfully about the relations between these two nations—the benefit that this commodity offers to many million consumers—and understands the loss that will arise from excluding Japanese goods, he must shun the protection policy and adopt that of free trade. Then it is most important that our nation should also adopt the free trade policy and offer equal chances for China.

For the sake of Japan and China

It is quite natural that the world powers should persistently endeavour to acquire rights in China, since the country is a sealed warehouse of immense potentiality. Here, it is grievous that the economic relations between Japan and China are not gratifying, in spite of the fact that the two nations have very intimate relations, historically and geographically. What the past may have been, the two must cherish the closest co-operative relations in future, so as to ensure the safety of this giant republic and to ensure Japan's economic independence. The present war has taught us a valuable lesson: that no nation can make war without first of all ensuring her economic independence.

Japan alone can never make sure of her economic independence as she lacks the raw material. But, fortunately, China can supply what we need and thus create our independence. In this relation, Japan can develop her colonies as producers of raw material and at the same time open up the source of concealed wealth in China, thus securing the latter's advancement. For all these reasons, it is best that Japan and China should go hand in hand as free traders, and that is the foremost question awaiting decision between the two nations. This, therefore, is not only a question concerning cotton spinners but our nation at large. —The Far East.

RECENT BALDWIN LOCOMOTIVES FOR EXPORT

Among the locomotives recently built for export by the Baldwin Locomotive Works, are 10 for the Canton-Hankow Railway of China (Hupei-Hunan Section), which are of more than ordinary interest because of the conditions under which they will operate and the details of their construction.

The Chinese locomotives are divided into three classes. Four of the engines are of the Ten-wheel type for passenger service, four are of the Consolidation type for heavy freight service, and the remaining two are tank engines of the 0-6-0 type, for switching service. These are all standard gage locomotives, built with interchangeable details where practicable. The materials conform to specification issued by the American Society for Testing Materials. The drawings were prepared by the builders, but the designs are strongly suggestive of foreign practice.

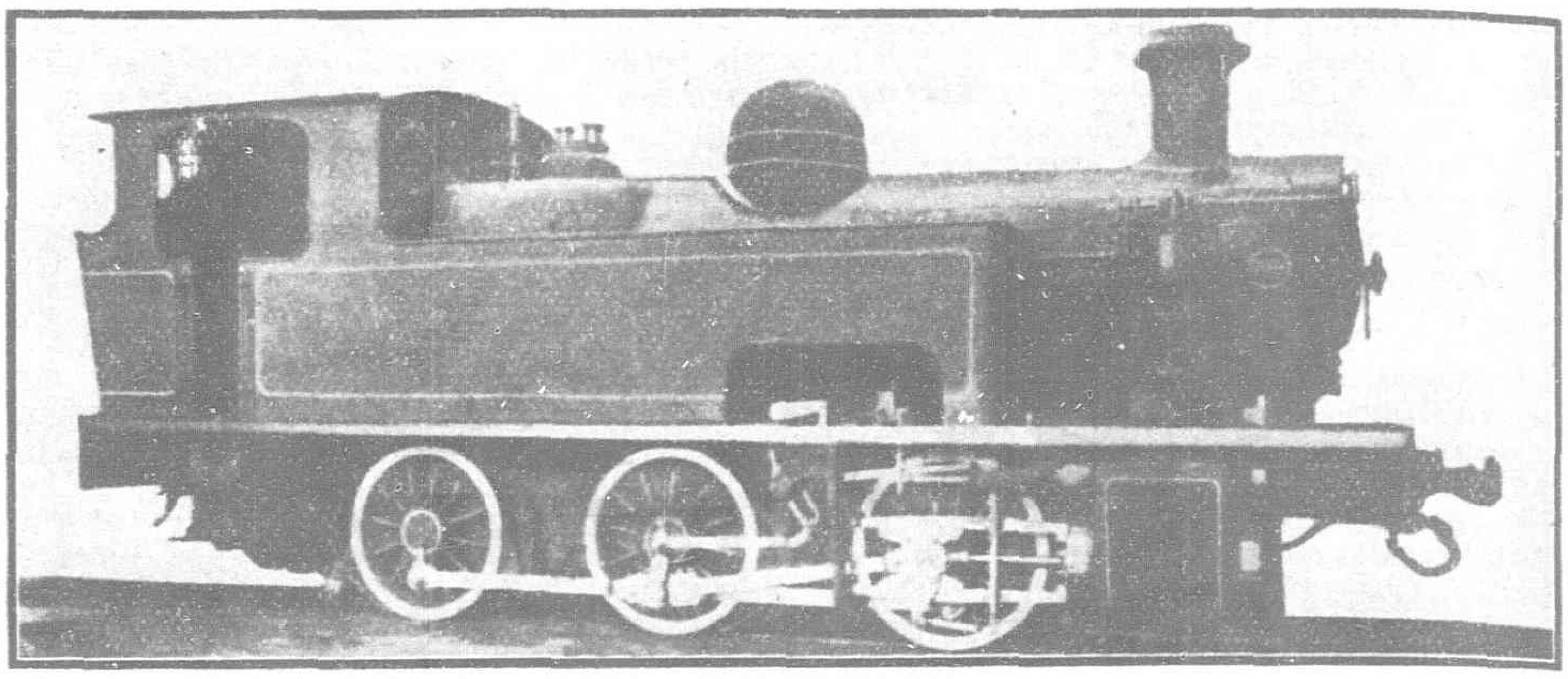
The passenger locomotives exert a tractive effort of 23,600 lb., based on a mean effective pressure equal to 85 per cent of the boiler pressure. The boiler is of the Belpaire type, with a steel firebox, rocking grate and Schmidt superheater. The frames consist of steel plates, 1¼ in. thick. Each frame is made in one piece, and a substantial system of cross bracing is applied to insure lateral stiffness. This bracing includes a long steel plate, placed in a horizontal position between the first and second pairs of driving wheels. The driving springs are underhung, those of the second and third pairs of driving wheels being connected by equalizing beams. The engine truck has a swing bolster and plate frames. The truck springs are not equalized, as the frames are suspended directly from them.

The cylinders are cast separately from the saddle. Piston valves 11 in. in diameter control the steam distribution, and the valve gear is of the Walschaert type with screw reverse mechanism. The equipment includes Westinghouse air brakes, one Weir's feed-water pump and heater, and one Metcalf's vertical restarting hot water injector. The driving journals and cylinders are lubricated by mechanical oil pumps. The design is so arranged that the Lockyer balanced throttle valve, manufactured in Great Britain, can be installed. However, as these throttles could not be secured in time, Baldwin throttles were temporarily fitted and Lockyer valves will be installed subsequent to the arrival of the engines in China.

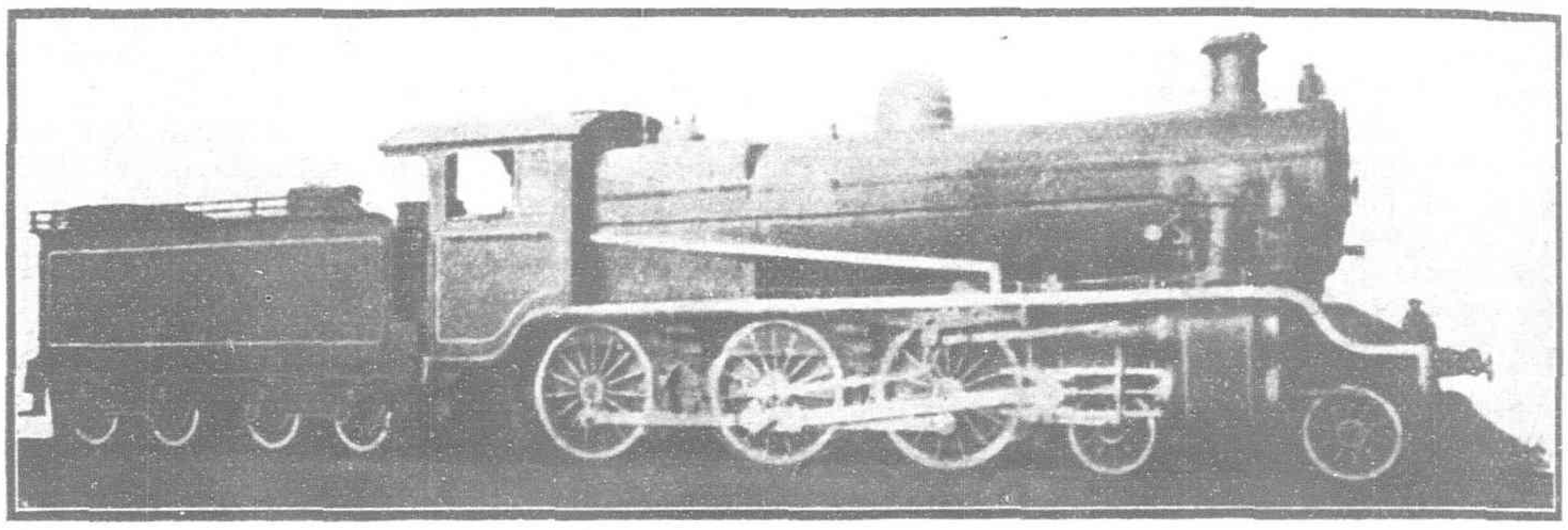
In general construction and equipment the Consolidation engines are similar to the Ten-wheelers. In order to obtain sufficient grate area, the firebox in the Consolidation type is placed above the rear pair of drivers, while in the Ten-wheel type it is between the frames. The Consolidations exert a tractive effort of 33,500 lb.

The switchers exert a tractive effort of 19,600 lb. The water supply is carried in side tanks, and the fuel in a coal box placed back of the cab. In general construction, these locomotives are similar to the road engines.

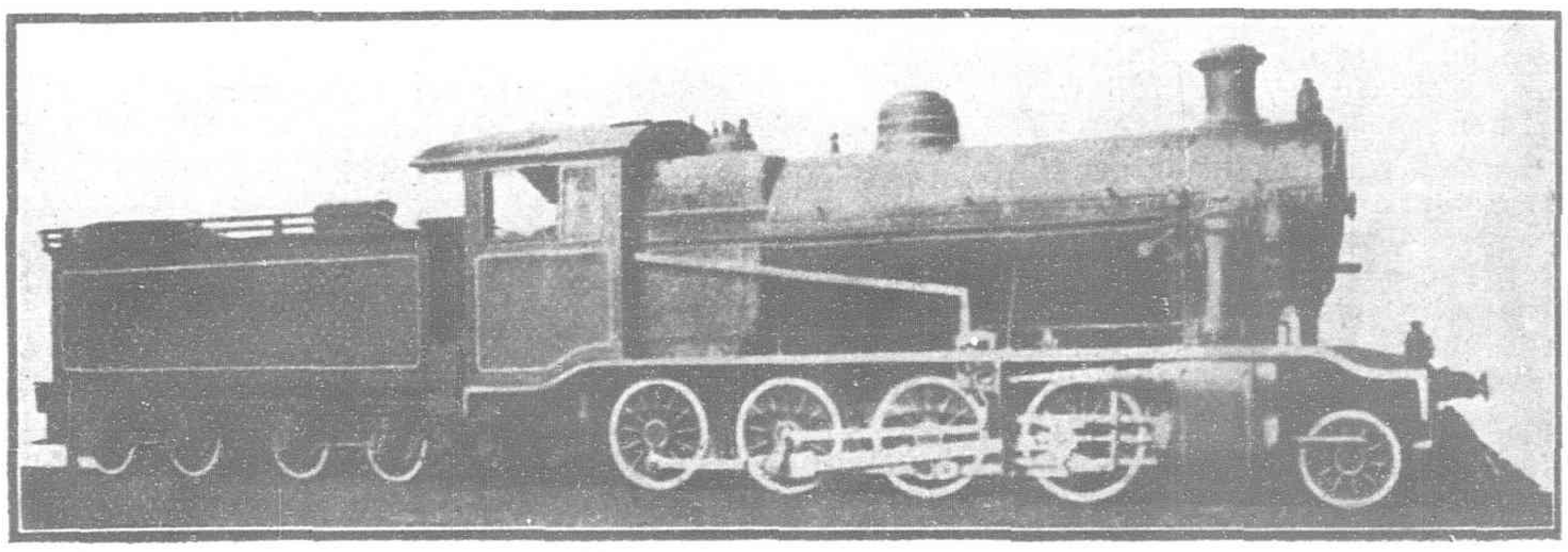
The leading dimensions of the locomotives for the Canton-Hankow Railway are given in the following tables:



Six-Wheel Tank Engine for Switching Service, Canton-Hankow Railway



Ten-Wheel Locomotive for the Canton-Hankow Railway



Canton-Hankow Railway Consolidation Type Locomotive

	General Data		
Type	2-8-0	4-6-0	0-6-0
Gage	4 ft. 8½ in.	4 ft. 8½ in.	4 ft. 8½ in.
Service	Freight	Passenger	Switch
Fuel	Bit. coal	Bit. coal	Bit. coal
Tractive effort	33,500 lb.	23,700 lb.	19,600 lb.
Weight in working order	159,600 lb.	159,700 lb.	100,500 lb.
Weight on drivers	143,400 lb.	113,900 lb.	100,500 lb.
Weight on leading truck	16,200 lb.	45,800 lb.	....
Weight of engine and tender in working order	261,000 lb.	261,000 lb.	....
Wheel base, driving	16 ft.	14 ft. 9 in.	12 ft.
Wheel base, total engine	24 ft. 3 in.	28 ft.	12 ft.
Wheel base, engine and tender	52 ft. 4¼ in.	55 ft. 7¼ in.	12 ft.
	Cylinder		
Kind	Simple	Simple	Simple
Diameter and stroke	22 in. by 26 in.	21 in. by 26 in.	17 in. by 24 in
	Valves		
Kind	Piston	Piston	Piston
Diameter	11 in.	11 in.	8 in.
	Wheels		
Driving, diameter over tires	51 in.	66 in.	48 in.
	Boiler		
Style	Belpaire	Belpaire	Belpaire
Working pressure	160 lb.	160 lb.	160 lb.
Tubes, number and outside diameter	161—2 in.	137—2 in.	182—2 in.
Flues, number and outside diameter	24—5⅜ in.	22—5⅜ in.	....
Tubes and flues, length	14 ft. 4 in.	15 ft. 7½ in.	10 ft. 6 in.
Heating surface, tubes and flues, sq. ft.	1,682	1,596	993
Heating surface, firebox, sq. ft.	157	185	103
Heating surface, total, sq. ft.	1,836	1,781	1,096
Superheater heating surface, sq. ft.	420	404	....
Grate area, sq. ft.	39.7	31.8	19.5

ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

RAILWAYS

The Wuchang-Changsha Railway.—Construction work on the Wuchang-Changsha section of the Hankow-Canton railway, has been seriously interfered with by the financial stringency caused by the war, and by the great difficulties experienced in the purchase of necessary material. Track has been laid for eighty miles from Wuchang, and an additional thirty miles have been ballasted and are ready for the rails. Gangs are working on 25 miles of permanent way northward from Changsha and another 25 miles is being built northward from Yochow. Work has been obstructed throughout owing to transportation difficulties, costs in connexion with which constitute the largest item of expenditure, all rivers being useless for navigation except at high water.

Necessary buildings in connexion with the railway have not been built owing to shortage of finance, and supplies of materials which should have come to hand eighteen months ago are just being delivered, while some foreign contracts have had to be cancelled. Owing to the war prices have increased one hundred per cent., estimates having, of course, been based upon pre-war conditions.

Efforts are being made to have the line in operation between Wuchang and Changsha by April of next year, but the railway officials will be pleased if they can link up by June, seeing how great are the unlooked for delays. What these are is indicated by an incident which occurred in connexion with a shipment of locomotives. The steamer carrying them arrived at Wuchang without adequate means for discharging them and after considerable delay was compelled to return to Shanghai and there transfer them to another vessel. In his report for the September quarters of this year the British Consul-General at Changsha further illustrated some of the trials and tribulations attending the work. He stated:

> But for an unfortunate occurrence to one of the well-curbs of the Liu Yang River bridge, the Changsha section of the line would be open, for a distance of twenty-six miles, to construction trains. The previous district engineer, Mr. Boothby, had no compressed-air plant, and had to work with pumps and dynamite for sinking the wells. The explosive provided was nitrogelatine, the exact power of which was not accurately known to the engineers, who were accustomed to ordinary dynamite. Owing to alternating strata of hardish clay and loose sand, the well has had to be sunk some 65-ft. below the river bed.
>
> An air plant was at last available. Mr. Medlock, the present engineer, brought it to Changsha and installed it on this well, thereby accelerating the work considerably. Unfortunately, within one day of reaching hard bottom, the air pressure cracked the cemented sides of the well, which had been weakened by the use of explosives. The work can now only be completed by divers, involving a delay of about one month.
>
> Meanwhile steel bridge materials are arriving, and twelve miles of rails have also arrived from Hanyang in steel lighters drawing 5-ft. to unload which only four days were allowed, after which demurrage at the rate of Tls. 250 a day per lighter was to be paid. The watermark at Changsha was, at the time, somewhere between three and four feet above Customs zero. Somehow or other the lighters were able to be towed to the mouth of the Sin-ho creek, and by strenuous work the rails were landed ashore in small junks within the time allowed. The shipping arrangements, in this case, were made by the Hanyang Steel Works Authorities, who supply the rails. This is an instance of the difficulties the British engineers have to contend against, at a time when funds are low and materials hard to obtain.

Nevertheless it is expected that the line will be opened right through from Wuchang to Changsha in April or May next year. The prospects of the railway are good. In the single case of the Pinghsiang Colliery, it will most probably have the carriage of 2,000 tons of coke a day from the very first and possibly more.

Proposed Extension of Kiukiang-Nanchang Ry.—According to a report by Mr. W. Russell Brown, H. B. M's Consul, the shareholders of the Kiukiang-Nanchang Railway are anxious to secure the extension of the line from Nanchang to Kan Hsien (late Kanchow) in Southern Kiangsi in the hope that the outlet so given to the rich products of that region may bring increased traffic to the railway and so aid the restoration of its financial position. A suggestion was recently brought forward by the Assistant Director to the effect that a loan of $25,000,000 should be raised from American financiers and, after repayment of the outstanding Japanese and Chinese loans used for the extension to Kanchow.

The following table shows the amount of cargo brought into Kiukiang by the Nanchang-Kiukiang Railway during the nine months ended September 30th, 1916:—

January to March.

Description.	*Classifier.*	*1915.*	*1916.*
Tea, seed	Piculs		15.59
Tea, black	,,		400.87
Tea, leaf	,,		62.26
Tea, dust	,,		2.41
Tea, stalk	,,		124.18
Timber, planks	Fang		910.
Wood, poles, large	Pieces		138.
Wood, poles, medium	,,		190.
Wood, poles, small.	,,		195.
Wood, poles, miscellaneous	,,		117.

April to June.

Bamboo	Pieces	1,066	1,816.
Tea, black	Piculs	2,072.92	10,008.32
Tea, leaf	,,	7,543.08	9,564.23
Tea, dust	,,	121.39	1.21
Tea, stalk	,,	17.85	109.58
Timber, planks	Fang	1,109.	1,067.
Wood, poles, large	Pieces		167.
Wood, poles, medium	,,	630.	69.
Wood, poles, miscellaneous	,,	226.	51.

July to September

Description.	*Classifier.*	*1915.*	*1916.*
Tea, black	Piculs	2,742	1,831
Tea, leaf	,,	7,276	6,615
Tea, dust	,,	69	3,552
Tea, stalk	,,	461	221
Timber, planks	Fang	1,130	965
Junk borne June quarter 1916, Tea, black	Piculs		105,447.33
Junk borne June quarter, 1916. Tea, leaf	Piculs		12,415.18
Junk borne, Sept. quarter, Tea, black	Piculs		11,121
Junk borne Sept. quarter, Tea, leaf	Piculs		11,310

An examination of the above table of rail-borne cargo shows that no inconsiderable part of the trade of the port—approximately 9 per cent of the junk-borne total in the June quarter—in spite of the heavy handicaps of bad management and railway maintenance taxes levied on all provincial goods travelling by rail. Under efficient management this is merely a matter of time, the volume of rail-borne cargo is certain to increase and the line is likely eventually to carry the bulk of cargo arriving in Kiukiang for export. This must result in a movement of shipping away from the British Concession across the creek to the west in order to be nearer to the railway. This will mean that the business centre of the port will pass from the Concession to the railway river front, and steamers that have facilities to load cargo in the vicinity of the railway will enjoy a marked advantage as compared to their competitors in the Concession. In this connection it should be noted that the Japanese firm of Nisshin Kisen Kaisha has already acquired hulk and shore connections opposite the railway terminus. It is, of course, likely that the railway company may in time build a public wharf, but in view of the strong Japanese influence in the railway Japanese steamers would no doubt be shown preference as compared with those of other nations.

The contemplated removal of the Native Customs and possibly the Maritime Customs to a site above the creek in close proximity to the railway will still further tend to take away cargo from steamers berthing at the Concession. The bridging of the creek and the expansion of the railway along the back of the British concession is absolutely necessary in order to prevent the diversion of the business centre of the port from the Concession in the interest of the resident British firms.

Ssupingkai - Chengchiatun - Railway.—Survey on the route for the proposed Ssupingkai-Chengchiatun Railway having been completed, Mr. Wu, the Superintendent of the Railway, is proceeding to Peking to submit the plan and estimate to the Department of Communications. Mr. Wu recently conferred with the South Manchuria Railway Co.'s authorities in Dairen. Since the price of materials has considerably advanced, it is impossible to build the line with the amount of money originally deemed sufficient for the construction. Therefore, the work will be started with a view of making it serve the purpose for the time being, and gradually replace it with more permanent structures. Expenses required in this way, for railway bed and a temporary bridge across the Liao-Ho, etc., will not be more than $4,000,000, but if a steel bridge is to be built, this alone will cost over $1,800,000, and the total cost will exceed $6,000,000.

A portion of the road-bed has been built. Work on the balance of the route will be started next year, as soon as the ground thaws, with the object of completing a temporary line as far as Sankiangkow by December, 1917. This section between Ssupingkai and Sankiangkow will then be opened to traffic. It is expected that the entire line up to Chengchiatun will be ready for service by August, 1918. After the provisional line comes into existence, the authorities will set to work to reconstruct it into a permanent road a section at a time and the reconstruction probably will end by 1919. But as this depends upon the financial condition of the Company as well as the facility of those who will supply the required materials, more or less delay may ensue.

The Hanyang Steel Works will furnish rails, the first lot having been shipped on November 30. It will be brought to Ssupingkai and onward by Chinese carts, the only conveyance available and to get a sufficient number of them together will be a painstaking task in itself.

For the present no station will be built at the Ssupingkai end, but the installation of the South Manchuria Railway Co. there will be utilized. Rigid economy will be exercised all around, and yet, about $120,000 per mile is expected to be required for the construction, in view of the difficult nature of ground over which the railway is to run. Great difficulties are especially expected in the bridging of the Liao River, where it is said that even at a depth of 150 feet a solid foundation is still lacking.

Work on Canton-Szechwan-Hankow Railway.—According to the *China Advertiser*, translating from Chinese newspapers, the plan of connecting Kwangtung with Szechwan was first mapped out by an American corporation. In view of great national interests involved in the line, however, the late Chang Chih-tang bought back the concession from the corporation with the idea of building it under the auspices of the Government. But strong opposition of the people in the province through which the line was to pass, who wanted it to be constructed as a popular enterprise, prevented the work from being carried out for several years. Later Mr. Sheng Hsuan-hui, thinking it hopeless to see the railway brought into existence if left in the hands of private promoters undertook to have the Canton-Hankow and the Hankow-Szechwan lines nationalized and planned to push the work by obtaining the necessary funds from abroad. But it happened that in Kwangtung and Szechwan shares having been subscribed for, works were about to be started under private management. In consequence, considerable opposition was raised against Sheng's scheme, with the result that the Government had to relinquish the project and commence operations in Hunan and Hupeh, giving permission to Kwangtung and Szechwan to proceed with the work under the supervision of the private companies concerned.

This left the section between Wuchang and Kwangchow on the Canton-Hankow line and the section between Hankow and Kweichow on the Hankow-Szechwan line in the hands of the Government. When the Republic was established the Government appointed Mr. Jeme Tien-yu superintendent of the lines and detailed him to Hankow to carry out the work. The outbreak of the European war, however, soon compelled this able engineer to drop the extension of the line, as the supply of funds was cut off. Thus, the undertaking so far as the work of advancing the railhead is concerned is now almost suspended, but on the section where construction was started gangs of coolies are kept busy. For the present, the Hankow-Szechwan Railway is in the follwing condition. With the exception of the section between Chengtu and Kweichowfu, which is to be built by a private company, the balance of the line belongs to the Government. This Government section is divided into two parts, one between Kweichow and Ichang and Hankow. Each part has its own general office for construction, which is located at Ichang and Hankow respectively. Owing to the very mountainous nature of ground near Ichang, an outlay of a large sum of money was found necessary for construction. But the war having deprived China of the source whence she could obtain her financial supply, work is now abandoned. In the division under the supervision of the Hankow-Ichang General Construction Office, work was going on the 20 li section between Tienmen Hsien and Peishi. Director Jeme however thought it unnecessary to maintain the general office for such a short section and so closed it last year. He is now personally superintending the work. The line between Hankow and Peishi having already been completed Mr. Jeme managed to obtain funds from a foreign bank to push it further westward 37 kilometers beyond Peishi. A survey was made, and the purchase of land has been started.

On the Canton-Hankow line, practically the whole route is owned by the Government, with the exception of a stretch near Kwangchow and theChangsha-Chuchow section, which are in the hands of a private corporation. The latter is in the possession of Hunan people and in working order. For the Government line, a general office was established at Hankow and work was pushed from Wuchang to Hsuchiapeng, when the outbreak of the European war compelled the authorities to suspend operations. Later, however, arrangements having been made between the railway authorities and a foreign bank, funds were procured to push the railhead to Yochow, but when the extension was undertaken it was found that unless Changsha was reached, the line would not pay. With that end in view, therefore, further negotiations were opened between the Communations Department and the bankers, and money was obtained to carry on construction as far as Changsha for a further distance of 300 li. Rails have already been laid for the section between Wuchang and Puchi Hsien for some 200 li, and railway materials are being carried forward over the line. It is expected that the Wuchang-Yochow section will be opened to traffic by the coming spring.

Karafuto Ry. Expense Curtailed.—The present Japanese ministry has made a cut of 260,000 yen in the building expenses of the Karafuto railway *for the next fiscal year*, which, according to the original plan made by the Okuma cabinet, was to be 1,230,000 yen. The railway is to run round the island, and 19 miles in Atei Bay line and 38 miles in the western coast line were decided upon for construction during next fiscal year by the Okuma ministry. The present ministry has lessened the next year's portion in the western coast line to 28 miles.

Japan's Railway Revenue.—The revenue of the Imperial Japanese Government Railways from April to November 21 was 41,529,387 yen in passenger fares and 42,647,540 yen in freight charges. Compared with the same period of 1914, there was an increase of 3,676,134 yen in passenger fares and 8,769,781 yen in freight charges, and against the same period of 1915, an increase of 4,446,136 yen in passenger fares and 8,396,573 yen in freight charges, this year.

Haiphong-Yunnan Railway.—The gross receipts of the Haiphong-Yunnanfu Railway (859 kilometres) for the first eight months of 1916 amounted to $2,028,904 as against $1,781,962 for the same period in 1915. Although the rainfall this year has, if anything, been less than the average, traffic on the Haiphong-Yunnanfu Railway has been interrupted several times owing to landslides and heavy goods traffic has been stopped for some months. Messrs. Shewan, Tomes and Company have had $60,000 worth of machinery on the line since the beginning of May, which has not yet reached Yunnanfu. The worst break was in the Namti valley, where tunnel No. 20 fell in, fortunately without causing any loss of life; this, in addition to necessitating lengthy and costly repairs, has caused considerable anxiety to the Railway Authorities, as the mountain which this tunnel pierces is constantly moving. It is hoped by the end of October to be able to push goods wagons through this tunnel by hand, but it will probably be some months before it is considered safe for a locomotive to pass.

Shantung Railway.—The estimates for the Shantung Railway for the next fiscal year, now under overhauling at the Japanese War Office, are substantially the same as those for the preceding year with an increase of Y100,000 or thereabouts for construction and current expenses. The aggregate amount is put at Y650,000 in round figures.

On the reorganization of the Shantung Railway staff (Mr. T. Fujita, Director-General), M. S. Sakaguchi (Superintendent of the Mining Department) has been created Director, assuming the place of assistant to Mr. Fujita.

The five departments have been increased to eight with their respective superintendents as under:—

Mr. T. Sayeki, Auditing and Statistical; Mr. S. Kitada, Traffic; Mr. Y. Funata, Locomotive; Mr. K. Nakamura, Construction; Mr. K. Kato, Accounting; Mr. S. Kobayashi, Stores; Dr. Y. Homma, Hygienic; Mr. K. Wada, Workshops. The Auditing and Statistical Department is a new creation; the Transportation Department has been resolved into the Traffic and the Locomotives, and the Accounting Department into the Accounting and the Stores. The Railway staff consists of 29 officials of the *sonin* Rank aud 374 of the *hannin* rank.

Russian Railway Bridge at Habarovsk.—The Amur Railway bridge over the Amur at Habarovsk was opened to traffic on November 5/18, the nameday of the Czarowitz, in the presence of Gov.-Gen. Gondatti. The new Bridge was christened after His Imperial Highness. Its construction has taken five years to complete and has cost Roubles 18,000,000. It is 7593 feet long, one of the longest bridges in the world.

Mengkiang-Linkiang Light Rail Line.—The Mengkiang-Linkiang light rail line, 27 miles in length, the construction of which was undertaken by a group of Chinese gentry, headed by Mr. Wanglinko, has the Sanchiatzu-Wangchiatangtzu section (about 17 miles long) completed. Favourable weather being granted, the whole line may be finished before the end of the year. The light rail line is for the conveyance of timber to be put out from the forest lands in the two Prefectures.

Shanghai Tramways.—The following is the Traffic Return of the Shanghai Tramways for 12 months ended 31st December, 1916, with figures for the corresponding period last year:—

	12 Months ended 31st. December, 1916.	12 Months ended 31st. December, 1915.
Gross Receipts	$1,537,577.53	$1,348,288.61
Loss by currency depreciation	387,509.61	362,368.77
Effective Receipts	Mex.$1,150,067.92	Mex.$ 985,919.39
Percentage of loss by currency depreciation	26.72	28.58
Car Miles run	3,803,980	3,344,998
Passengers carried	69,089,432	59,749,719

MINES

Tayaokow Coal Mines.—The coal mines at Tayaokow are located at a point about 30 miles north-west of Chinchow, north-east of Hsingcheng and due north of Lienshan Wan. The discovery of the deposit was made ages ago, but aside from its being used for domestic purposes by the local Chinese, the public was hardly aware of the existence of such mines in Western Liao Territory. The fact of the existence of an enormously rich coal-bed in the region was brought to the light of publicity for the first time during the period when the "rights recovery" idea was rampant throughout the country, some years ago. At once a company was organized with a capital of one million dollars, Chang Hsun, Liang Shih-yi, Yeh Liang-hsiang, Lo Yu-ting, Wang Ching-shan and other high officials being among the principal shareholders. As the first step, a coal-depot was established at a place called Yang-Hsin-Tun, 6 miles west of Chinchow on the Ching-Feng Railway. Then a railway was constructed straight to the mine for a distance of 19 miles. Modern mining apparatus was bought and operations were started. This took place in Kwang Hsu's 30th Year.

The company has two pits, the depth of the first measuring 650 feet and the second 380 feet, with an incline of about 20 degrees. Double tracks of light railway are laid in the mines for hauling the output, 1,000 trucks being used for the purpose. 5-600 miners are used, and 400 tons, more or less, of coal are taken out every day. The management and operations are entirely in the hands of Chinese. The mining lots in possession of the company merely amounting to about one-fourth of the extensive coal bed understood to be lying in that region in three distinct coal seams and running in different directions, the management is said to be contemplating to further purchase adjacent coal fields. The quality of the coal will best be learned from the below reproduced analytical table in which it is compared with the Fushun and Kaiping products.

	Fushun.	*Kaiping.*	*Tayaokow.*
Water	5.23	2.82	2.62
Volatiles ...	36.52		16.16
Fixed Carbon ...	50.71	69.36	62.09
Ash	7.54	27.82	19.12
Sulphur ...	0.63	0.75	0.65
Nitrogen ...	14.10	0.06	

At Chinchow and its neighboring towns, the Tayaokow lump coal is sold at $7.20 per ton, while dust coal fetches something like $4.90. Owing to the inexpensiveness of the price, the output is expected to be brought to South Manchuria in large quantities soon, a trial of a 200-ton shipment having already been made to Yingkow in September and distributed to various workshops to try it.

As the mines are located not far from Lienshan Wan, when the port at the latter is constructed the product can be shipped to various directions without experiencing any difficulty. At present, the Kailan coal is supplying the market in the Liaosi region to the extent of 50% of the demand, against 30% of the Fushun and 20% of the Tayaokow coal, but the time will come when the last mentioned will prove to be a formidable rival to the two others not only in the region, but in other ports along the southern coast of China.—*China Advertiser.*

Anshanchan Iron Mines.—Mention was made in previous issues of the iron mines at Anshanchan. A Sino-Japanese joint corporation named Chenhsing Kungssu has been organized and the promoters are said now to be in readiness to start mining as soon as the necessary permit is given by the authorities. The ore taken out will be purchased by South Manchuria Railway Company which intends to set up two smelters next year, to be able to produce say 150,000 tons of pig iron per annum. The plant will be gradually extended with a view of manufacturing steel. At a meeting of the Directors of the Railway Co. recently held at Dairen, an organizing Committee was appointed to proceed with the preparatory work. The site of the iron works and other matters will be decided upon by the Committee.

Regarding the project, Mr. Nunome, a Japanese iron expert, says that Japan demands same 1,300,000 tons of iron a year. Against this, her own iron production does not reach more than half a million tons. Thus, a considerable quantity of the metal is annually imported from the United States, Germany and China. In Manchuria, iron was first manufactured at Penhsihu. The present scheme of turning out iron with the ore obtained at Anshanchan is a timely one, not only because it is produced at a place not far from the Government Iron Works at Yawata but because the nature of the iron is such that it can be manufactured into steel most in demand in Japan. Mr. Nunome thought it inopportune to discuss the particulars of the scheme, nor was he able to give a definite statement regarding the kind and quantity of steel to be manufactured at the works, six varieties of steel being in use in Japan. But he was sure that iron works to be established at Anshanchan will not have to go through such great trials as were experienced by the Yawata Government Works during its early stage.

Shantung Iron Mines Worked by Japanese.—It has been decided, after all the attempts made by some enterprising private capitalists of Japan, that the experimental borings of the Chinlingchen Iron Mine should be made by the Shantung Railway Administration. There is a wide divergeney between the German estimate and an estimate formed on a geological deduction as regards the wealth of the mine, says the "Manchuria Daily News," adding that an approximately accurate estimate as to the extent of the vein and also the quality of the ore is expected to be prepared upon the results of these borings. From Y. 20,000 to Y. 30,000, they say, is thought to be enough for the boring process.

As regards experimental mining, continues the Dairen paper, the Germans carried out the excavation of a pit to the depth of 300 ft. One hundred feet further down the vein is expected to be reached. A few tens of thousands of yen are supposed to suffice for the purpose. All the funds required are being defrayed out of the emergency fund of the War Office. When the mining work is to be inaugurated in good earnest, when the results of the experimental borings warrant such inauguration, at least Y. 500,000 or so will be required. As there is only a light rail service now available between the mine and the Shantung Railway, a branch line on standard gauge will have to be built, and in order to have every detail of the plan realized, an outlay of about Y. 3,000,000 will be wanted. In such event the amount will be asked of the Imperial Diet in the form of a supplementary estimate.—*N. C. Daily News.*

Seoul Mining Companv.—During the month of November the mills of the Seoul Mining Co. treated 18,754 tons of ore and recovered Yen 285,600. The outlook in the Prospecting Department is most satisfactory, and the testing of the Soctarie Tungsten Ore continues encouraging.

In December, 18,284 tons of ore were crushed from which $136,688.36 U. S. Gold, were recovered in Bullion and Concentrates. December being the end of the Company's Fiscal year, there will be included in the accounts a receipt of $184,000 U. S. Gold, representing Smelter Returns in excess of Mine valuation due to the high price of Copper.

Tong Ahm Tunnel No. 9, located about 1,500 feet from the Main Workings of the Tul Mi Chung Mine, is now developing an average grade ore.

COMMERCIAL

Newchwang Export Returns.—Goods exported from Newchwang to Japan during May, 1916, amounted to 422,809 piculs, including 267,966 pls. bean cake, 4,720 pls. bean oil, 848 pls. castor oil, 41,178 pls. pig iron, etc., besides 1,440 tons Fushun coal. Bean cake decreased by 19,972 pls., but bean oil increased by 1,253 pls., as compared with the corresponding period of last year. Goods destined to China ports during the same period totalled 239,815 pls. in addition to 4,100 tons Fushun coal and 2.800 of Kwantung salt. Compared with the corresponding period of last year, bean cake and beans decreased by 47,980 pls. respectively.

Japan's Raw Silk Export.—The export of raw silk has increased greatly during the last few months. For eleven months from July 1, last year, to the end of May, the silk shipped from Yokohama was 185,246 bales—25,852 bales to Europe and 159,394 bales to America. Compared with the figures of corresponding period of the previous year, there was an increase of 2,143 bales to Europe and 35,648 bales to America.

Calamba to Enlarge Sugar Central.—A 2,000 ton sugar central at Calamba, Laguna, to be erected as soon as cost of material and freight has gone to normal, is the plan of the Calamba Sugar Estate company, according to an announcement made by Executive Secretary De Veyra upon his return from an inspection trip. This improvement is being considered by the company in view of the continuous extension of the sugar fields which are under cultivation. The sugar company has about 9,000 hectares of land, but only one thousand of these are under sugar cultivation, the other 8,000 being left idle, or in some parts planted with coconuts and other kinds of commercial plants. The company has at present a mill with a capacity of 1,200 tons, which is being turned out every day, working both day and night, without a moment's rest. Next year the company plans to increase the milling capacity of the machine by 500 tons more, as it is forecast that 1917 will see a banner sugar crop. In case freight conditions and cost of material have come down to normal, the company will then undertake to increase its present milling capacity by one thousand tons more.

China's Cotton in Demand.—A recent estimate shows a decrease of 1,700,000 bales in the expected yield of American raw cotton, which has caused Japanese mills to turn to China more insistently as a source of supply owing to the recent rise in prices. Affected by the appreciation of American and Indian raw cotton the Chinese raw cotton market also shows activity. Stocks are now decreasing owing to the shortage of output and also to the demand from spinners in Shanghai. Stocks held in Tokyo and Yokohama on September 5, were 2,500 bales of Ningpo and 400-500 bales of Tientsin which will be disposed of in one week's time, while new raw cotton could not be expected before the middle of the month.

New Ningpo raw cotton is now quoted at 34 yen 50 sen, some business for which is expected to be concluded in a few days, whereas Tientsin cotton, which is superior to the Ningpo, is now ruling at 37 yen 50 sen, which is expected to rise to 40 yen in sympathy with the quotation on American and Indian cotton. The difference between Tientsin and American product used to be 12 to 13 yen, and the fact that it now is over 20 yen indicates a further rise in Tientsin cotton. Waste cotton is now being used for making of other larger yarns, to save the cost. The above fact coupled with keen demand from Russia contributed towards brightening the market, which now shows an advance of 1 yen 50 sen to 1 yen 70 sen. With the appreciation of American and Indian cotton, the Chinese cotton is expected to assume an unusual activity and the future of the raw cotton market is now full of interest.

CANADA CARBIDE COMPANY

Canada has for many years, at least since 1896 up to the outbreak of the war, been studying History. Since the outbreak of the war Canada has been making History. When the account of the Great War comes to be written, Canada will have an honorable place.

The demand for new materials other than those we have been accustomed to produce has awakened the latent energies of our foremost Captains of Industry and as a result Canadians have surprised themselves as much as they have surprised the outside world by coming to the front and producing articles, such as Munitions, which up to two years ago we had never dreamed of manufacturing.

The adjustment of commerce amongst the Allies has drawn heavily on other manufacturing and industries, and possibilities never before dreamed of are now knocking at our door with an inviting voice to come in and possess the land. Among such industries can be mentioned the Canada Carbide Company, Limited, with Works located at Merritton, Ontario, and Shawinigan Falls, Quebec. This Company first doubled their capacity, then trebled it and now have quadrupled their capacity of three years ago and have now the largest Carbide Works in the British Empire.

The demand is increasing so fast that another enlargement is contemplated. This means a great increase in the demand for Canadian Raw Material. It means increased demand for Canadian Labor and Capital. It is also an advertising medium as every package shipped is plainly branded "Canadian Carbide" and the quality of the Carbide being the very best has enabled the Company to hold old customers and win new ones.

Canadian Carbide is used in all parts of the world, China, India, and the Islands of the Seas, in addition to the British Colonies and the United Kingdom.

The Canada Carbide Company, Limited, is also branching out by making other metallurgical products, of which we are promised a brief account at some future date. This has been brought about by having a large quantity of cheap electrical power, of which Canada has many, the electrical developments at Niagara Falls, Peterboro and Shawinigan Falls being just starters.

The Canada Carbide Company, Limited, is closely allied with the Shawinigan Water & Power Company, from whom they purchase electrical power.

PLANTATION FILTER PLANT

The Kuala Lumpur Rubber Co. are about to install a Candy Filter Plant for dealing with the water supply to one of their Estates, the water being obtained from a swamp well. The Filter is being supplied by the Candy Filter Co. Ltd. of Westminster, London, England, who are shipping it, together with a Chemical Alumina Plant, and a quantity of the powerful Oxidizing and purifying material "Polarite," which will be used in the Filter, as well as silica sand and grit, to ensure the highest degree of purity.

The Candy Filters have the great and unique advantage of being the *only* Filters in the market that contain the special Oxidizing and purifying material known as "Polarite," in addition to a filtering bed of Silica Sand, etc. Polarite is a specially prepared and granulated black magnetic oxide of iron in a microscopically porous condition—it is rustless and practically everlasting and has proved to be a most powerful oxidizing and purifying material.

The late celebrated Scientists, Professor Sir Henry Roscoe, as also Sir Edward Frankland and others, made exhaustive trials with Polarite and reported it to be a highly valuable material for the purification of water. Many other scientists have also, from practical experience of the material, formed the highest opinion of its purifying powers; the Candy Filter Co. are the sole manufacturers and owners of Polarite (it being the invention of Mr. Frank Candy, the Managing Director of the Company who has had upwards of 20 years practical experience in water purification).

Candy Mechanical Filters therefore, possess one unique and great advantage over all other types of Filters, inasmuch as they alone are the only Mechanical Filters which contain a layer of Polarite, in addition to the layers of silica sand, grit and gravel used in all Mechanical Filters. Silica Sand is an *inert* substance that can only act as a straining material, while Polarite is an active oxidizing agent, possessing intensive purifying as well as filtering properties.

Only recently the Candy Filter Co. shipped a large quantity of Polarite to the West Coast of Africa, at the order of the Crown Agent for the Colonies, for the purification of a water supply in Nigeria. Briefly speaking, Candy Filters can not only do the same work as all other types of Filters, but are able to perform such work in a better, more scientific and economical manner, by reason of the special advantages arising from the use of Polarite, of which the Candy Filter Company possess the sole rights.

MEDIUM-LIFT CENTRIFUGAL PUMPS

It is not always a simple matter to decide whether a pump for dealing with large quantities of liquid against a comparatively small head should be of the turbine or centrifugal type. The distinction between the two lies in the fact that guide vanes are fitted to turbine pumps but are not included in the centrifugal design. This may not assist potential users to select the more suitable form, and the choice should be left to the makers, but as a general rule, for dealing with quantities up to 1,000 gallons per minute, turbine pumps should be used where the head exceeds 100 ft., and centrifugal pumps for delivering against lower heads. Where the quantity to be dealt with exceeds 1,000 gallons per minute, and this has to be delivered against a head of over 150 ft. turbine pumps are the more suitable, but where the head is less than this, the centrifugal form is the better type.

In view of the fact that Messrs. Mather & Platt, Ltd., Park Works, Manchester, were the original makers of the turbine pump, their name has been identified with that form throughout the world, but it is not generally so well known that they also make centrifugal pumps, which maintain the high standard attained by the type so long associated with their name. Centrifugal pumps for medium lifts are dealt with in an 8pp catalogue that has just been published by this firm, their characteristics and details of construction being described fully. These pumps maintain their efficiency over an unusually wide range, and will not overload the motors driving them beyond a predetermined amount, however much below normal the head against the pumps is reduced. While any required degree of overloading can be provided for, the firm's standard is about 10 to 15% above the power required to drive the pump at its normal rated output.

In the design of these pumps the makers have based their calculation upon recent and exhaustive experiments, in order to secure the most efficient conversion of velocity-head into pressure-head. The casing is so proportioned that it forms a rigid framework for the branches, end-covers and bearing brackets, while solid feet of wide spread support the pump on the baseplate. Without removing the pump from its bedplate or disconnecting either the suction or the delivery pipes, it can be entirely dismantled for repair or examination. Split bearings with split bushes are standard. Pumps used for dealing with wood pulp and semi-liquids generally, are provided with an external clean water seal. The impeller is of the double suction enclosed type, carefully balanced to ensure smooth running, the vanes being filed to template and all the other parts bored, turned or fitted to gauge. No thrustblock is needed, the pump being in perfect hydraulic balance owing to the form of impeller and to the provision of clearance spaces of similar shape on either side. The pumps can be driven by belt or rope or through a flexible rubber-bush and steel pin-type coupling by an electric motor.

FIREPROOF CONSTRUCTION

Fire prevention is the order of the day. More and more is a study being made of ways and means of fireproofing. In the United States there has been established a Fire Prevention Society—an organization whose name denotes its purpose. And the Underwriters Laboratories of the same country is continually testing devices designed to prevent fire.

But it is in fireproof construction that perhaps the most progress has been made. Any number of building materials now on the market are contributing to lessen fire risk. Conspicuous among them is Kno-Burn Expanded Metal Lath.

It is a well known fact that the great majority of fires start indoors. Most frequently they begin in the walls. An overheated furnace or pipe is often the cause of conflagrations.

Kno-Burn Expanded Metal Lath is greatly decreasing the number of interior fires. It is fireproof and therefore safe. Wood lath is a conductor of fire and therefore is a menace.

But Kno-Burn Expanded Metal Lath is more than fireproof. It is economical. It has the same co-efficient of contraction and expansion as has the surface of plaster or stucco which covers it. Therefore, cracks, falling plaster and the need for repairs are obviated.

A REVOLUTION IN METAL BEDS

The metal bed, and particularly the iron bed, has for years led the world in metal furniture, but it was never brought to its best usage until the perfection of the light weight cold rolled burnished steel tube bed, which has recently been perfected by the Simmons Company, of Konesho, Wisconsin.

This Company has long enjoyed the largest volume of metal bed business in the world, but for several years they have recognised the imperfections in the old style heavy gaspipe iron bed. They have had their engineers working with a view of perfecting a lighter bed, which, at the same time, would give a smooth surface and a solid construction. These years of experiment finally developed the bed which has revolutionized the industry, and has placed such a heavy demand for shipments on The Simmons Company, that they have been forced to work night and day in order to keep pace with the ever increasing business and they have built a six story addition to their factory for the express purpose of caring for this one article. One of the most striking facts about this unprecedented demand is that the orders have come from every corner of the world, and the problem before The Simmons Company today is to secure shipping facilities to fill these orders from Archangel to Cape Town, and encircling the globe from Panama to the Suez.